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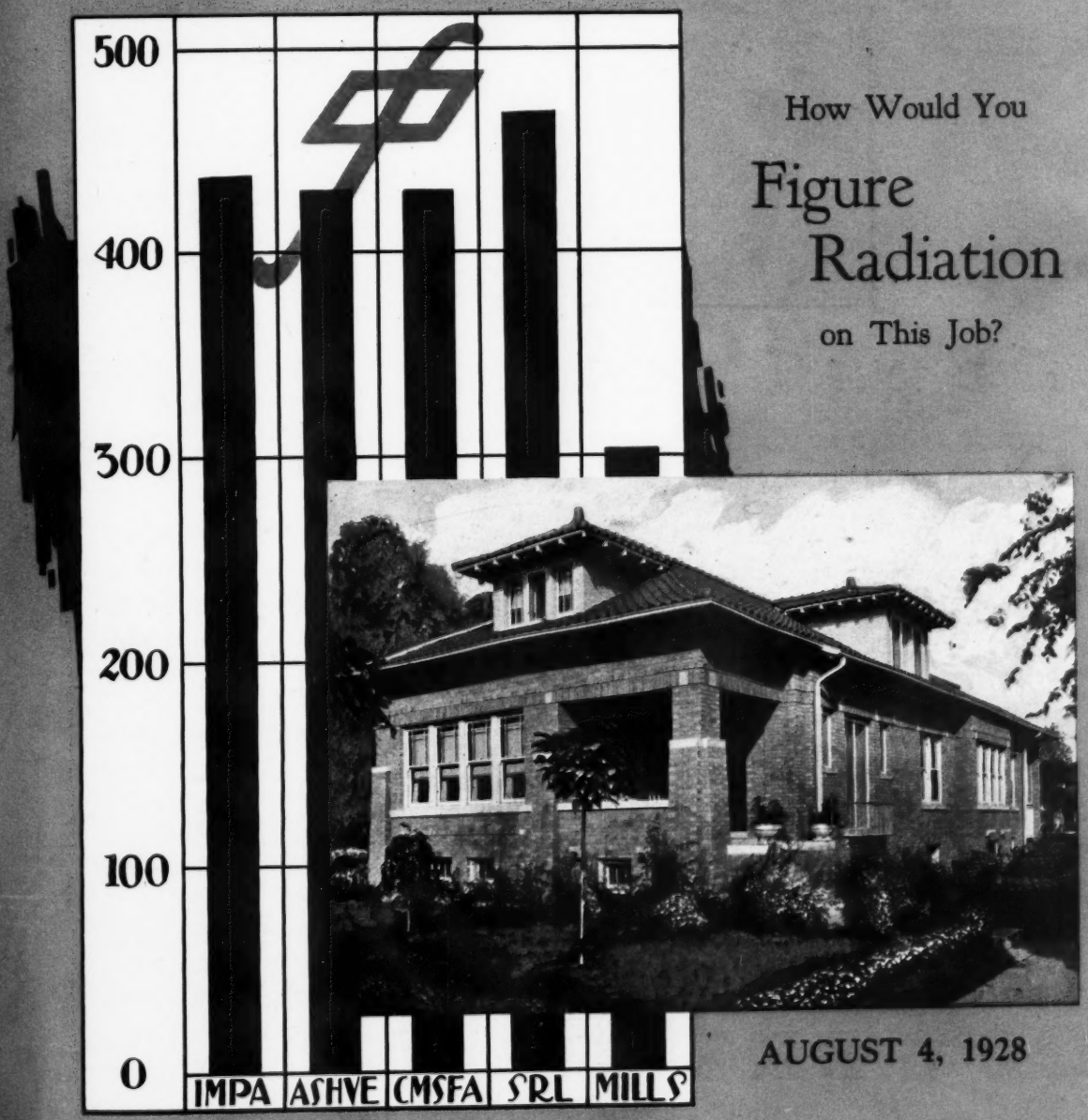
# DOMESTIC ENGINEERING

## The Plumbing and Heating Weekly



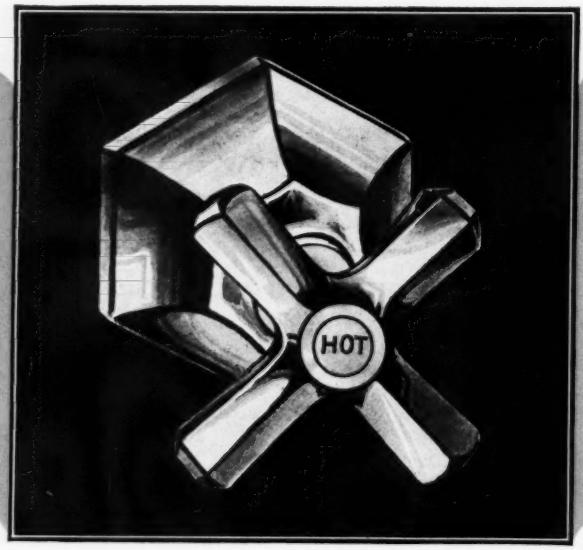

How Would You

Figure Radiation

on This Job?

AUGUST 4, 1928

# fire!




## *the washroom was ablaze*

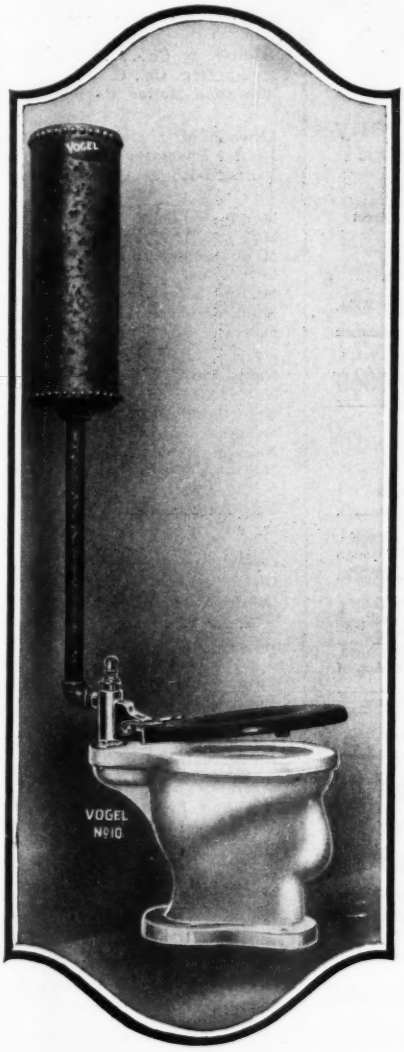
In a Nurses' Home at Rochester, N.Y., fire broke out in a washroom. The fire, feeding on some packing boxes and excelsior stored there, gained quick headway. Wall tile discolored beyond hope of saving. Yet the Speakman Chromium-plated Showers and Fixtures, exposed to the full blast of the heat, were *unharmed.*

*When wiped off with a cloth they were found to be as good as new.* Speakman Chromium-plated Fixtures are unbelievably durable and long-lived. They never tarnish. They never need polishing. They are always *new.*

Install them on your next job.

Speakman Company, Wilmington, Del.

# SPEAKMAN
## SHOWERS & FIXTURES




**VOGEL** *Number Ten Closet*

# Put Facts To Work For You

The automobile industry is one of the largest in the world. You know there are millions of cars in our country. Well, wherever there are cars there must be gasoline. Wherever there is gasoline there is a service station. Wherever there is a service station there should be a comfort station—and that's where you come in.

Show the service stations how and why they can get more people to stop if they have **VOGEL** Comfort equipment. Show them that clean sanitary **VOGEL** Closets, either Frost Proof or Seat Action, make friends whose good will turns into business. Do that for your customer and you'll find another sale on your **VOGEL** order book.

Jovo—

## Jos. A. Vogel Co.

**Wilmington, Del.** **St. Louis, Mo.**

VOGEL PATENTED

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# DOMESTIC ENGINEERING

*The Plumbing and Heating Weekly*

Established 1889

Published Every Saturday by

Domestic Engineering Company

1900 Prairie Avenue, Chicago

Address all Correspondence to Chicago Office
Long Distance Telephone: Calumet 4680
New York Office, Room 1706-7, 110 East 42nd Street
Telephone: Ashland 8111 and 8112
Cleveland Office, Builders' Exchange
Telephone: Main 4000
Philadelphia Office, Room 1507, Finance Bldg.
Telephone: Rittenhouse 2285
Pittsburgh Office, Room 604, Chamber of Commerce Bldg.
Bell Phone: Atlantic 8741-8746

Chicago, August 4, 1928
Vol. 124, N0. 5 Whole No. 1860



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TERMS OF SUBSCRIPTION
United States and Possessions, $2.00 per year.
Current copies, 10c each. Back numbers 25c each.
Canada, $2.00 per year. Foreign, $3.00 per year.

Entered as Second Class Matter on February 20, 1893, at the Post Office at Chicago, Illinois, Under the Act of March 3, 1879.



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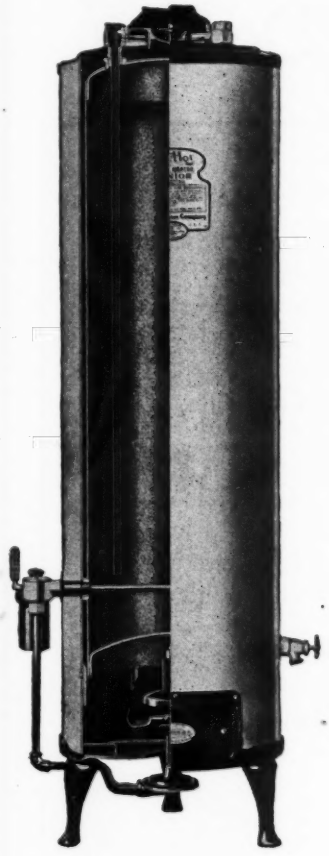


This is the howl that goes up whenever the gas-bill nerve is touched. Of all the pocket-book nerves in the human system, the gas-bill nerve is one of the most sensitive.

Right here is where the EverHot is of greatest importance to you. EverHot gas bills are low. They don't irritate—they please.

But getting back to the subject, most people watch gas bills closely. More so than lots of other items. For instance, a man will think nothing of a little theater party of six—with the Rainbow Gardens afterward—total cost of fifty or sixty dollars. Just a little evening of fleeting pleasure.

The same man probably would kick if he had to pay that much more for gas in a whole year—notwithstanding the fact that it brings a whole year's comfort, convenience and luxury for the whole family in the way of pleasant showers, perfect shaves, speedy washings, and abbreviated kitchen drudgery.

That is just one of the queer little quirks of human nature and it is principally upon that quirk of human nature that EverHot success has been built. People are invariably enthusiastic about a heater that gives splendid service with a low gas bill, and that is what the EverHot does.

## MORAL

Sell your customer a good heater with a low gas bill.

There are several reasons why the gas bill is low with the EverHot Automatic Water Heater. Here are some of them:

1st—The EverHot has the lowest stack loss of any automatic water heater made, bar none.

2nd—It is thoroughly insulated with an inch and a half of A-grade long fibre rock wool.

3rd—In the EverHot, the entire outside surface of the storage boiler is utilized as heating surface, making the heater highly efficient.

4th—Series "C" EverHot Automatic Water Heaters are equipped with the famous EverHot Leakage By-pass which prevents waste of gas due to dribbling hot water faucets. This is an exclusive feature designed by this company on which broad patent claims have been allowed. No other heater has this feature.

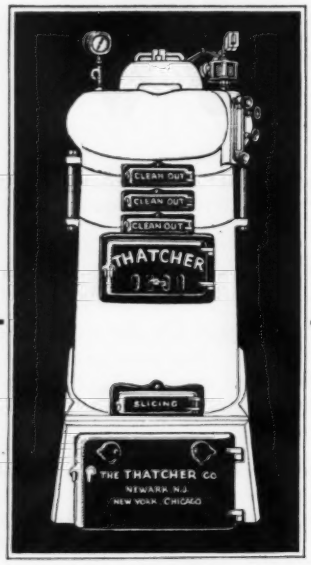
EverHot AUTOMATIC WATER HEATER

**The Heater with a Low Gas Bill**

# EverHot Heater Company

**5211 Wesson Avenue** **Detroit, Michigan**

# These THATCHER Features Make Sales for Dealers




Thatcher "Round Boiler"

THE advantage of Thatcher "Staggered Fire Travel" as applied to Thatcher Round Boiler has been so widely broadcast —that it is universally desired by home owners. Thatcher dealers are profiting by this well known Thatcher principle.

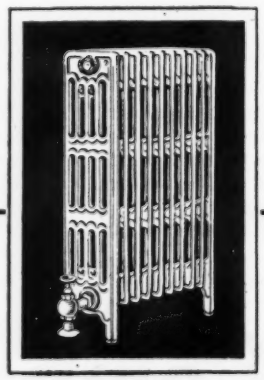
Low cost heat is assured owners of Thatcher Round Boilers, because waste is eliminated. Flames and hot gases are shunted back and forth again and again over all heating surfaces until every bit of heat is utilized.

In addition The Thatcher Round Boiler has a deep fire pot—clinker-proof grates, and other features which make it a highly desired heating plant.

If you are not now handling The Thatcher Round Boiler—you will be interested in receiving literature describing its construction and economy features. Write today.

## The New Thatcher "GOTHIC" Radiator

Slender tubes and graceful designs which harmonize with any kind of home and office decorations characterize the new Thatcher "Gothic" Radiators. A new booklet describing the various types is just off the press. Write for a copy.



The New Thatcher "GOTHIC" Radiator

THE THATCHER COMPANY
39-41 St. Francis St., Newark, N. J.
New York: 21 W. 44th St. Chicago: 341 No. Clark St.

**THATCHER**
**BOILERS-FURNACES-RANGES**

# NO *passing up of Sales*

# F-M LINE meets every water service need!

No matter what the source of water supply—no matter what form of power is available—there is equipment in the Fairbanks-Morse line to furnish running water under pressure.

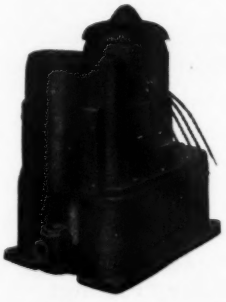
The dealer that handles Fairbanks-Morse Home Water Systems has *every* home without running water for a prospect. No need to pass up a sale because of lack of the type needed.

And how easy it is to sell the F-M line. Attractive equipment—reasonably priced—easy terms—a well known manufacturer.

With the Fairbanks-Morse Line of Home Water Systems, you are ready to figure on any type of water service job. A few items of the line are shown below. Write for complete details of an attractive dealer proposition.

**Every Line a Leader**

but this heads the procession. A complete 210-gallon-per-hour system at $70 f. o. b. factory also a system of twice the capacity for $100.

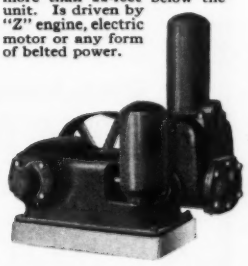


**Electric Pump for Deep Wells**

Where water must be lifted from a vertical distance greater than 22-feet. Can be furnished with automatic control which turns pump on and off to keep constant water supply without attention. Extremely well designed and constructed for constant service.

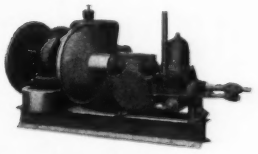
**The F-M Self-Oiling Typhoon Pump**

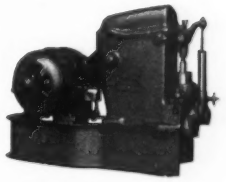
A duplex pump of larger capacity where 1000 to 5000 gal. per hour are required. Requires little attention other than occasional filling of the oil reservoir. For use where source of water will not be more than 22-feet below the unit. Is driven by "Z" engine, electric motor or any form of belted power.



**Type "JK" Silent Drive House Force Pump**

Where water must be lifted from a source not more than 22-feet below the unit but must be forced for considerable vertical distance to overhead or pneumatic tank this pump is an ideal installation. Driven by direct-connected 2-hp. "Z" Engine.





**Self-Oiling Deep Well Pump Head**

Designed for pumping from driven, open or cased wells where the water lift is greater than 22 feet. Especially adaptable for general pumping service. May be operated by an electric motor, automatically or manually controlled, or by a gasoline engine. Any one of a variety of combinations can be used with either chain or belt drive.

FAIRBANKS, MORSE & CO., *Mfrs.*, Chicago, U. S. A.

***Branches and Service Stations Covering Every State in the Union***

# FAIRBANKS-MORSE

## Home Water Systems

***Fairbanks-Morse Products*** F M ***"Every Line a Leader"***

Fairbanks, Morse & Co., Dept. I-8
900 S. Wabash Ave., Chicago, U.S.A.
Send full information on dealer proposition for Home Water Systems.

Name.....

Address.....

# There IS a difference in Brass Pipe Fittings

## 6 points of Superiority of A M B Brass Pipe Fittings

*Write us for Split Sample Fitting and Literature*

1. A red brass fitting of uniform composition, meeting all Navy and Federal Master Specification Requirements.
2. Averaging heavier than any other fitting on the market, because of thicker walls and longer threads.
3. Tapped with automatic machines, insuring alignment and threaded to correct gauge with proper chamfer.
4. Has a smooth sand blast finish, which brings out the dark red color of the metal, insuring against fins, roughness and scale on the inside.
5. Every fitting tested. Standard Fitting to 300 lbs. Hydrostatic Pressure—Extra Heavy Fittings to 600 lbs. Hydrostatic Pressure.
6. Packed in burlap bags and shipped in barrels with packing list on outside of each barrel.

AMERICAN MANGANESE BRONZE COMPANY

*"Founders and Metallurgical Engineers"*

HOLMESBURG - PHILADELPHIA, PA.

PITTSBURGH CLEVELAND NEW ORLEANS NEW YORK

CERTIFIED EARNING ABILITY

CLEAN money! Velvet! This might not be impressive if only minor savings could be made in haulage, but in most cases the actual cash that is saved through the Certified Earning Ability of Federal trucks has a far-reaching effect on the year's profits.

Get the facts. Learn the reasons. It isn't by chance that more than seventy per cent of all Federal trucks go to Federal owners. These repeat buyers *have* the facts, so year after year they cling to Federals, with their "Certified Earning Ability".

THE FEDERAL MOTOR TRUCK COMPANY, 5800 Federal Ave., DETROIT, MICH.

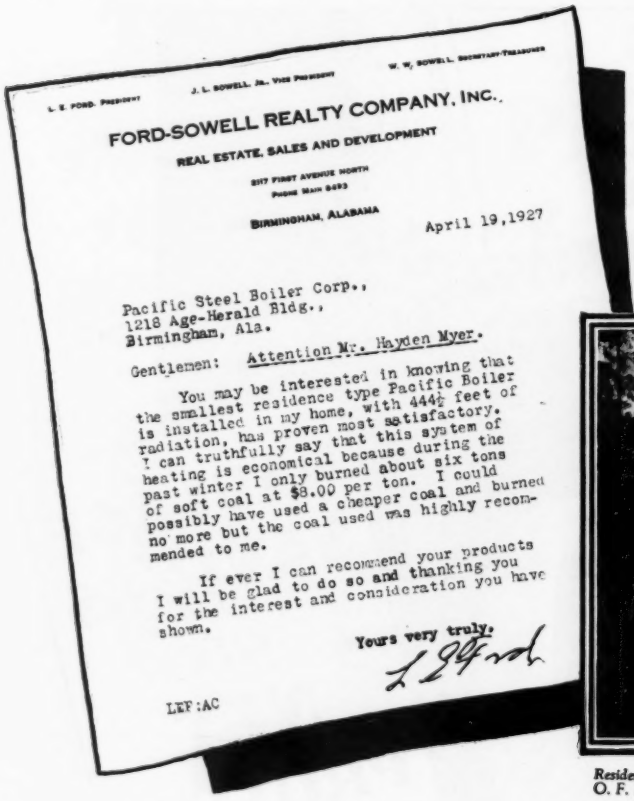
*"Leading Specialists in Commercial Transportation"*

# FEDERAL TRUCKS

ALL SIZES—FOURS AND SIXES

(181)

# It Cost $48.00 to heat this home all winter . . .



L. E. FORD, PRESIDENT J. L. SOWELL, JR., VICE PRESIDENT W. W. SOWELL, SECRETARY-TREASURER

FORD-SOWELL REALTY COMPANY, INC.

REAL ESTATE, SALES AND DEVELOPMENT

2117 FIRST AVENUE NORTH
Phone Main 8493

BIRMINGHAM, ALABAMA

April 19,1927

Pacific Steel Boiler Corp.,
1218 Age-Herald Bldg.,
Birmingham, Ala.

Gentlemen: Attention Mr. Hayden Myer.

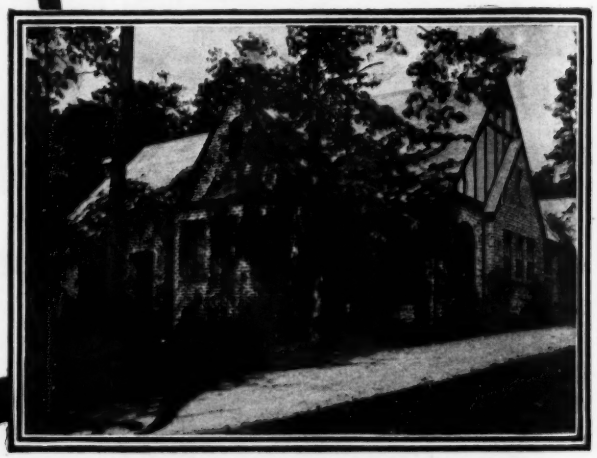
You may be interested in knowing that the smallest residence type Pacific Boiler is installed in my home, with 444½ feet of radiation, has proven most satisfactory. I can truthfully say that this system of heating is economical because during the past winter I only burned about six tons of soft coal at $8.00 per ton. I could possibly have used a cheaper coal and burned no more but the coal used was highly recommended to me.

If ever I can recommend your products I will be glad to do so and thanking you for the interest and consideration you have shown.

Yours very truly,

L E Ford

LEF:AC



*Residence of L. E. Ford, Redmont Park, Birmingham, Ala. Chas. H. McCauley, Architect. O. F. Payne, heating contractor. One No. 201 Steel Pacific Residence Boiler installed.*

While building up a national reputation for safety and dependability, Pacific Steel Residence Boilers have likewise established remarkable records for heating economy. Here is an interesting example — a Birmingham home heated for $48.00 during a whole winter. The unusually low cost per degree of temperature difference accounts for the climatic factor and makes these figures applicable to other parts of the country. For lowest operating cost and most satisfactory performance, it pays to recommend the compact Pacific.

**Compare This Heating Cost with the Cost of Operating Other Boilers**

Heating load: 444½ square feet direct C. I. steam radiation.

Fuel Used (1926-7 heating season): 6 tons bituminous coal at $8.00 per ton.

Cost of heating per square foot radiation: 10.8¢ per year.

Cost of heating per degree temperature difference: .00772¢ per yr. per sq. ft. radiation.

# PACIFIC

## STEEL RESIDENCE BOILERS

FACTORIES: WAUKEGAN, ILL., BRISTOL, PA.

STEEL HEATING BOILERS · PACIFIC · WAUKEGAN, ILL. BRISTOL, PA. · TRADE MARK REG. U.S. PAT. OFF.

# which brass pipe should you choose?

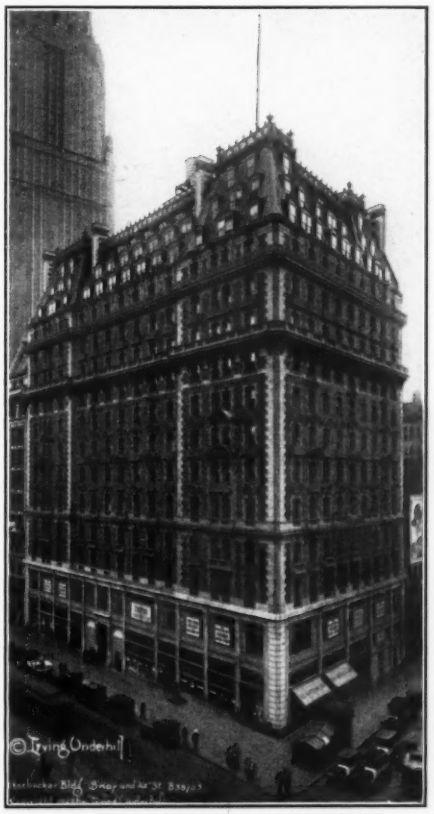
**Brass is not an elemental material. It is a manufactured product and its capacity for maximum service depends entirely upon the skill, knowledge and experience of the maker.**

PLUMRITE brass pipe has been tested in actual use over a long period. Thirty years of service have proved that its composition is practical—that its method of manufacture does guarantee uniformity. Re-installation in old, built-over buildings has clearly shown its ruggedness.

Other mixtures, with various copper contents, have been tried and found suitable for certain localities, but they bring no advantages to the vast majority of installations. For unusual requirements Bridgeport can supply brass pipes of any desired mixture. But Plumrite is recommended as the most satisfactory pipe under general conditions.

**Plumrite brass pipe, is, we believe, as nearly perfect as a brass pipe can be. Time and again, experience has borne out this belief.**

**Our booklet, "Bridgeport Standard Mixtures," explains the standard brass pipe mixtures in use to-day—and tells when and where to use them. It will be mailed free to you on request. Send for a copy.**




## A Typical Service Record

In the Hotel Knickerbocker building at 42nd Street and Broadway, New York, "Plumrite" brass pipe was installed when the structure was built in 1895. In 1921, the building was remodeled for office purposes and the piping, after a quarter of a century's use, was found to be in perfect condition. The complete system was retained, and has continued to give absolute satisfaction.

**BRIDGEPORT BRASS COMPANY**
BRIDGEPORT Bridgeport BRASS CO CONNECTICUT

*"MAKERS OF BRASS PRODUCTS FOR OVER 60 YEARS"*

# For THE FINEST BUILDINGS ...THE FINEST RADIATION..

No. 1 FIFTH AVENUE, NEW YORK
*Architect*, Helmle & Corbett
*Heating Contractor*, Chas. H. Darmstadt, Inc.
*Builder*, Jos. G. Seigel, Inc.

# AERO
## THE NATIONAL RADIATOR

In the years when Aero, the National Radiator, was the only complete line of tube-type radiation on the market, it was the almost invariable selection for the finest buildings. That was only natural.

Now, competing with many imitations, it is still chosen with amazing regularity. *That is significant.*

It indicates appreciation of the fact that Aero has, during more than six years, been rendering faithful, trouble-free service on heating applications of every character; and that it is the only complete line of tube-type radiation that can show so impressive a record of demonstrated dependability.

The man who selects Aero, the National Radiator, takes no gamble on the quality or on the satisfactory performance of his warming equipment.

## NATIONAL RADIATOR CORPORATION
MANUFACTURER OF RADIATORS AND BOILERS

*Ten Plants devoted to National Service through these Branch Offices and Warehouses:*

Baltimore, Md.—2600-2622 Frisby Street
Buffalo, N. Y.—259-265 Delaware Avenue
Cleveland, Ohio—935 E. 63rd Street
Indianapolis, Ind.—431 W. Georgia Street
Louisville, Ky.—1126 W. Breckenridge St.
New York, N. Y.—55 W. 42nd St.
Philadelphia, Pa.—121 N. Broad St.
Richmond, Va.—3032 Norfolk St.
Boston, Mass.—93-97 Oliver Street
Chicago, Ill.—2445 N. Keeler Avenue
Cincinnati, Ohio—Spring Grove and Elmira Avenue
Johnstown, Pa. — 221 Central Avenue
Milwaukee, Wis. — 124-130 Jefferson Street
Omaha, Neb.—108-112 S. Tenth Street
St. Louis, Mo. —1042 Central Industrial Ave.
Pittsburgh, Pa.—1509 Arrott Building
Washington, D. C. — 2205 Fifth Street, N. E.

# A Letter from Harry G. Nye

August 4, 1928

To the Plumbers and Steamfitters
of the U. S. A.

Friends:

There is a good deal of loose talk now-a-days about the Scotch being tight, and I don't like it. I guess there must be a little Scotch in me, although some people say I act more as if it was rye. I have traced my ancestry back to the American Revolution, which is as far back as the police records go, but there may be some Scotch in me that dates back even farther than that; and pre-war Scotch, especially pre-Revolutionary War, ought to be pretty good.

One thing that makes me think that there may be some Scotch in me is something that happened at our house the other day. My wife laid out three old suits of mine and asked me if I didn't think it would be better to give those to some tramp than to go around looking like one. The fellow who sold them to me last fall said they would be very much worn last winter, and they were. He said they would be worn every place, and they were.

But I liked to go on wearing them because they were all broken in, where they were not broken out. Then, as soon as my wife found they were comfortable, she thought I ought to give them away. If a man is comfortable, that proves that he isn't dressed up. The regret of my wife's life is that men don't still wear armor. You can't make a woman understand those things, any more than you can make her understand a fishing hat or a pipe.

If there is anything a woman likes to do it is to give away a man's clothes. It is almost as hard for a man to keep himself in clothes as it is to keep her inside of hers. What we fellows ought to do when we need a suit is to go around to each others' back doors. Our wives would hand us out each others' clothes, and it would help quite a bit when the steam-fitting business or the plumbing trade is none too good.

So I said all right, and saved myself a lot of time and argument. Next morning I put on the worst-looking suit, hoping to save at least that much, and when I got home that night I found that all the clothes I had was what I had on and a dress suit you would have to pour me into with a spoon. But luck was with me. The next day the tramp brought the clothes all back. He said they were all too tight. That's why I think I must be Scotch.

Maybe that's where Nye Tools get that bulldog grip. Maybe that's why they never give. Anyway they are the plumber's closest friend.

They, and yours truly,

Harry G. Nye

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**NYE**

**Thin Blade Cutter Wheels**

**Knurled**

**or**

**Smooth Edge**

**Made to Fit All Standard Makes of Pipe Cutters**

Knurled Edge

Smooth Edge

Nye cutter wheels are made from the highest grade tool steel, and are hardened and tempered in oil. Blades about $\frac{1}{16}$th of an inch thick and straight from hub to cutting edge. Cut with one-third the time and power required by old type wheels. And also they are—

**ABSOLUTELY GUARANTEED**

OTHERWISE KNOWN AS

**THE NYE TOOL & MACHINE WORKS**

MANUFACTURERS OF HIGH GRADE PIPE TOOLS

4120-30 Fullerton Avenue Chicago, Illinois

*for Economical Transportation*

CHEVROLET

# *The New* Utility Truck

## *. . . . the Lowest Priced Truck with 4 Speeds Forward . . . 4-Wheel Brakes!*

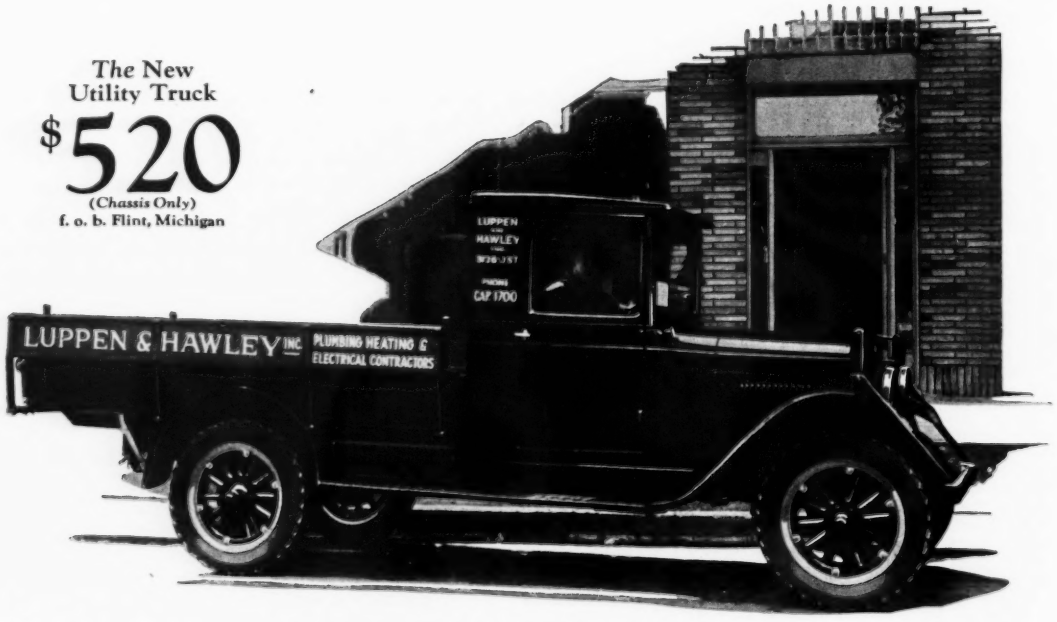
Now Chevrolet presents the New Utility Truck—a low-priced haulage unit embodying every feature of advanced engineering developed through years of experience in commercial car building, and proved by exhaustive testing on the General Motors proving ground!

A new four-speed transmission, with an extra low gear, gives tremendous pulling power for heavy roads, deep sand and steep hills—and reduces to the very minimum the starting strain on motor, clutch and rear axle! Powerful, non-locking 4-wheel brakes, with a separate emergency brake, give a new measure of safety and utility. And a new ball-bearing worm-and-gear steering mechanism provides handling ease never before experienced in a low-priced transportation unit.

Visit your Chevrolet dealer and get a demonstration of this remarkable new truck. There is a body type designed especially to meet the requirements of your business.

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN
*Division of General Motors Corporation*

*The* New Utility Truck
$520
(*Chassis Only*)
f. o. b. Flint, Michigan




WORLD'S LARGEST BUILDER OF TRUCKS

**Individual copies of "Domestic Engineering" are well balanced in content, covering a diversity of interesting subjects.**

# Between Ourselves

**"In no other line of endeavor can be found a finer collection of talent than in our industry." —J. W. Oliver, v. p., Stand. San. Mfg. Co.**

*In his article, "How Would You Figure Radiation For This Job?" Samuel R. Lewis asks a pertinent question. Figuring radiation is a subject on which there is always a certain amount of debate, and about which there are many diversified opinions. Many of these are based on research work, while others are results of normal prejudices established through experience. All may be good under certain conditions, while some are more preferable for others.*

Your Editor

FOR the first time in history, as far as is known positively, a number of methods of figuring radiation have been applied to one house. The methods are those of the Illinois Master Plumbers' Association, the American Society of Heating and Ventilating Engineers, the Chicago Master Steamfitters' Association, the Mills method and Mr. Lewis' method. The difference in these methods is shown by the chart on the front cover. Also on the cover is a photograph of the house in which they were all used. Mr. Lewis describes and analyzes these various methods of figuring radiation.

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THE five and ten cent store merchandising principles have been held up to the business world as being productive of a great deal of business, and as being sound principles on which to build business. It is not without the scope of the imagination, however, to believe that the executives of one such organization might criticise its branch managers for lagging in producing business, pointing out how other stores in his city were getting it. In other words, no matter how good a merchandising principle on which we work, there is no merchandising perfection in any one industry. In trying to find an outlet for his products, one Sales Manager came to that conclusion. He decided that the plumbing and heating industry was the outlet for his products, and went out to see what some of its retailers looked like. He describes this week the "five and ten cent" selling tactics of one successful merchandiser.

---

VOCATIONAL education is beginning to take rapid strides in this country as the people realize more and more that the number of "white collar" jobs is less than the number of those who want to fill them, and that they are not as lucrative as one might be led to believe. Various organizations in the plumbing and heating field have gotten behind the movement, and vocational schools are rapidly increasing in number. In this issue is an article describing the new Frank Wiggins Vocational School in Los Angeles.

*WHEN renewing his subscription to "Your Weekly," a leading plumbing and heating contractor of Miami, Fla., wrote the following, "We make good use of 'Domestic Engineering,' and always read it every week."*

---

**FRED R. ZIMMERMAN, governor of Wisconsin, and running for re-nomination against Walter J. Kohler, president of Kohler Co., became a little excited in a recent campaign speech and overstepped the mark. He is quoted as saying, "Another thinks he ought to be governor because he is a multi-millionaire manufacturer of plumbing supplies. We know from experience how financially successful plumbers are, and why? Call a plumber to repair a faucet and, after ten minutes of imperceptible effort, he will use that faucet to draw all of the loose change out of your house. If you want to go bankrupt, hire a plumber." For the good of Wisconsin, we hope that Governor Zimmerman knows a little more about the business of running a state than he does about the plumbing business.**

---

FOR SOME time we have been running articles on pilot drawings, especially as applied to single cities and towns, and small groups of towns. This week R. M. Starbuck, Jr., has an article on "Pilot Drawing for an Entire County." He takes a county in New Jersey which incorporates nine towns and shows the pilot drawing for that county, describing notes of especial difference for the various towns.

---

**UNUSUAL plumbing,, heating and ventilating features are contained in the new city hall completed recently in Los Angeles, Calif. On the front cover of next week's issue will be a picture of this building, and in the paper a pictorial description of the mechanical equipment will be given. The city hall has long been under construction, and its completion marks the finish of one of the most beautiful municipal buildings in the country.**

*The man who is so busy that he does not have time to read his trade paper is like the man who was so busy chopping wood that he did not have time to sharpen his axe*

# BEATING COMPETITION—INCREASING PROFITS

YOU, too, can successfully meet competition and at the same time increase your profits by using "TOLEDO" tools operated by "TOLEDO" Power Drives to cut and thread the larger sizes of pipe.

Besides the speed of operation, the ease in handling, the smooth perfectly tapered threads, and the convenience afforded by doing the work quickly and when you need it, "TOLEDO" equipment gives you a very decided advantage by doing the work at lower cost.

You can cut off and thread 4-in. pipe in 5½ minutes; 6-in pipe in 8½ minutes; and 8-in. pipe in 10½ minutes, and other sizes proportionately rapid. "TOLEDO" geared threading tools and cutters operated by "TOLEDO" Power Drives, will produce these figures regularly in actual operation.

Take a pencil and paper and figure out what it is now costing you the old way and what it will cost you the "TOLEDO" way. You will be surprised at the remarkable saving, and like thousands of contractors realize the "TOLEDO" way of handling piping jobs is the most efficient way.

A post card to us and we will gladly show you how you, too, can increase your profits by using equipment that is marked—

"TOLEDO"

THE TOLEDO PIPE THREADING MACHINE CO. TOLEDO, OHIO

*New York Office: 72 Lafayette St.*

DOMESTIC ENGINEERING

Vol. 124, No. 5
Whole No. 1860

The Plumbing and Heating Weekly

Chicago, Illinois
August 4, 1928

# OBSERVATIONS

## Merchandising—Loose Talk vs. Facts

The spirit of merchandising is the most marked development in the plumbing and heating industry in recent years. The individual—manufacturer, wholesaler and master plumber and heating contractor—has realized the need for modern merchandising to put him out in front in the competition with others in his line of business. The industry, as a whole, has realized the need for it to meet the competition for the consumer's dollar from other industries. If there were "ages" in the plumbing and heating industry, we could now be said to be in the "merchandising age."

With this development has come some criticism of the way in which the master plumber and heating contractor has filled his place in the distribution scheme and some doubt as to his ability to fill it in the way said to be demanded by present day conditions. His is the place of all retailers, pushed by the manufacturer with excess or large production capacity to pass more and more goods on into consumption and criticized by the manufacturer, the manufacturer's salesman, the wholesaler and the wholesaler's salesman and even by other contractors, if he apparently does not accede to all demands. But, in spite of criticism, in spite of doubt, this same master plumber and heating contractor is doing a real job of merchandising, and those who know him will agree.

***Facts Answer Criticism***

As evidence of his aggressiveness and alertness, there is the experience of the Plumbing and Heating Industries' Bureau in its national advertising campaign. As the bureau states, the success of a national advertising campaign depends upon the extent to which local dealers will tie up with the national advertising. And, as the national campaign of the industry swings into its second quarter, the number of requests from master plumbers and heating contractors for mats of advertisements to run in newspapers exceeds the 1,000 mark. The bureau has 700 standing orders for mats. To this number, there were added in June 450 more requests, for a total of 1,150 tie-up advertisements requested by retailers in this industry in one month. That could be called a really phenomenal record, and we know the bureau will agree with us that it could not be made with a group of retailers who lacked the merchandising viewpoint.

A check-up made by us not long ago, and mentioned before in these columns, revealed that master plumbers and heating contractors in all sections of the country were using newspaper advertising that totaled a circulation of 27,000,000—and we counted only audited circulation and only space that could really be called display advertising. Here again is one of the best tests possible to make of the merchandising efficiency of an industry's retailers.

The swinging-spout faucet offers another example—and an example which suggests that, in many lines, the manufacturer, perhaps, has failed to give the trade something to sell. When a faucet is just another faucet, little opportunity for merchandising is presented. But, with the introduction of the swinging-spout faucet, came something new, something different to talk about. And how well it was talked—and sold—by the master plumber is attested by the volume of business manufacturers of this type of faucet have done.

***Proof After Proof***

"Domestic Engineering" runs a special section devoted to merchandising every fourth week. In this section are given the experiences of successful plumbing and heating retail merchants in every section of the country—how they advertise, how they display their goods, how they sell, how they make a profitable business of plumbing and heating. From two to a dozen concerns figure in each one of these sections. We have no trouble in finding material for these stories. There are literally thousands of examples from which we can choose.

The "Bath-a-Day" campaign, inaugurated by "Domestic Engineering" but carried on so efficiently by the retailers who have distributed thousands of copies of "The Story of the Bath" and forced it into a fourth edition, is another striking testimonial of merchandising progress.

And so it would be possible to go on, piling up actual facts as proof that the master plumber and heating contractor does not deserve the criticism that is so loosely leveled at him. The public pays more than a billion dollars annually to the master plumber and heating contractor in proof of his capacity to sell. That is his answer to his critics.

Note the display case which helps make "counter" sales

# Building Confidence *with* Small Sales

*The Sales Manager tells another story of his search for retail outlets*

AS A SALES manager, with the job of deciding through what industry we should market a new product, I came to regard that particular task as a matter of selective selling. I had to find the field in which I would find a sufficient number of men capable of merchandising our product. I did not look for a field in which every man was a genius at merchandising. Long experience had taught me the futility of that—although I notice that most men who criticise an industry do so from the standpoint that it is short of absolute perfection. I judged the field—the plumbing and heating field—in the light of certain merchandising ideas which I wanted to see applied to our product.

We have examples in various mercantile fields of big businesses built up from a large volume of small sales. Conspicuous among these of course are the five-and-ten-cent store chains. The application of the methods these stores use to the plumbing and heating industry may seem at first thought rather hard, but I learned of one firm, a New England establishment, that is fast becoming a factor in its city through the sale of small articles at a comparatively narrow margin of profit per sale, this by applying sound merchandising principles to its business.

Joseph Singleton, who recently opened a beautiful new showroom at 403 Dickinson street, in the Forest Park section of Springfield, Massachusetts, is the proprietor of the company I have in mind. Mr. Singleton has worked out his policies during 30 years in the trade, the past 15 years as a master. He has had a real store for five years, the new establishment being the fulfillment of a dream he has had since shortly after opening up the last place.

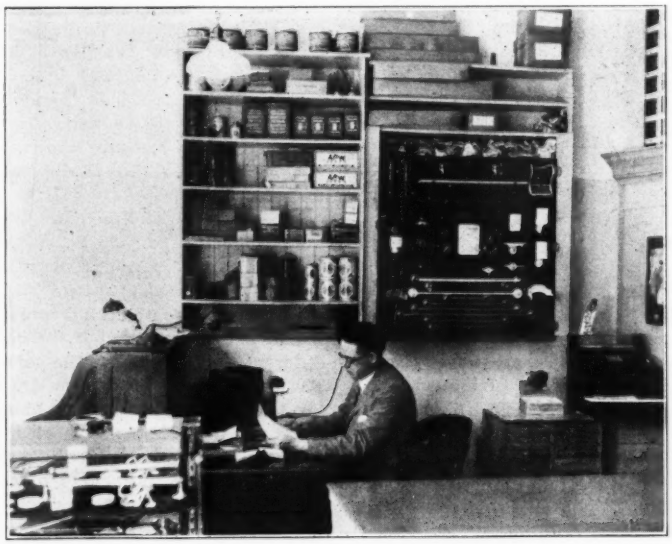
With this in mind, he has built up his sales of small articles until the volume of small sales equals approximately one-third of his total business. Contracting and jobbing are by no means subordinated to sales of small articles over the counter, but one must admit that a small-sales volume that is half of that secured from jobbing and contracting is one that must be reckoned with, especially as there is no chance of loss through improper estimating or price-cutting when making the counter sales.

Mr. Singleton is one of the great number of successful men who have the idea of familiarizing the public with the plumbing business. "There is no reason for secrecy in the plumbing business," he says. "Why should we act like putting on a new coupling to replace one that is defective or worn out is a job that only a journeyman plumber can do, when we know that all it takes is the proper fitting and a wrench, in most cases? Why insist that the customer pay the charge for a man going to the job, making the repair, and returning to the shop, when he can do it himself in a few minutes? Under the first arrangement we have to present a bill that looks prohibitive, that is likely to be protested by the customer, and

which nevertheless is a charge that returns a jobbing plumber almost no profit. Under the second, we make a slight profit on the fitting, the customer gets the work done more cheaply, he is pleased and we have a friend. Which is the more satisfactory method?"

**SAFEGUARDING SANITATION**

MR. SINGLETON, who is president of his local association, goes on to say that under no conditions, however, will he consent to selling a person anything that might possibly be installed incorrectly, so that an improper or unsanitary condition might arise. He believes as thoroughly in the principle that a plumber should do everything that may have an effect on sanitation as anyone, and tries to confine the majority of sales to things that will be used **above the trap.**



**Joseph Singleton at his desk**

People will buy more quickly if they know the exact price of the thing they want, without having to ask for it, and possibly find it more expensive than they feel they can afford, Mr. Singleton believes. He also finds that many people think plumbing goods are much more expensive than they really are. Therefore he has adopted the policy of plainly labeling every thing with the retail price. This applies not only to the more expensive things such as high grade shower curtains and accessories, but also to fittings, couplings and the like that are kept in bins. At the back of the showroom he has a system of bins, with labels showing the articles contained therein and also carrying the price on each fitting. The master also finds that many people coming in to the shop for a repair piece do not know just what they want. They may ask for a "half-inch coupling" when they really want a "quarter-inch nipple." For this reason, he is also always very careful to show the customer what they have asked for and ascertain if this is the correct item. Many times he finds that the prospect wants something entirely different from what he has requested, and sometimes it is necessary to take him back to the bins and let him pick out what he needs.

This arrangement has proved profitable to Mr. Singleton and convenient for his customers.

**Corner in the new showroom of Joseph Singleton, Springfield, Mass.**

## SMALL ARTICLE SALES

IT IS after the customer has picked what he wants that one of the major principles of Mr. Singleton's selling plan shows up. This, simply told, is to quote a price that gives him only a fair profit. The buyer is not forced to pay an exorbitant profit. Mr. Singleton offers a price which is based on costs, because he wants this type of business. Naturally, the man who does not want to have this type of business will charge what "seems" to be all right without reference to costs, because he gives the matter no thought.

The psychology of this, of course, is simple. Customers, given what they considered more than a fair deal when they made a very small purchase, are likely to think very favorably of J. Singleton when they have a larger plumbing job to let, or a big purchase to make. The same idea of popularly priced small articles is carried out in the store display. The windows, which have been called the "mirrors of the shop" are always graced by a number of small articles, with prominently displayed price tags. The merchandising plumber finds that a great many small sales are made by this method, and all contribute toward the building up of the large small-article volume that means so much when the books are balanced.

The front of the store is made up of four windows, as it was originally two stores. It now has four windows and two doors. One of the doors is not used. It has been painted over for advertising purposes.

A special effort is made to change the window displays about every two weeks, displaying in them articles that are used for that special season of the year.

In conjunction with the window displays, they make it a practice of sending envelop stuffers with bills and statements, calling customers' attention to the different lines of material carried.

Speaking of balancing of the books, the cash is balanced at the end of each business day, and the proprietor can tell how business has been. The counter sales are kept separate from other transactions, and a glance will show the profit and loss on these sales. Close attention to this detail has proved that the overhead expense of the business, including the showroom, is paid by the profit from small article sales.

On contracting and jobbing work, the labor and material are carefully separated on the job cards. All work cards are numbered and are filed in order, so that instant reference can be had to any job at any time during or after its completion. In order to keep the labor charge absolutely accurate, a time clock has been installed, and the journeyman signs out and in when going to or returning from a job. For repair work, Mr. Singleton will render no time charge under one-half hour. He has made labor pay a profit, and has found that the returns from this source pay his salary.

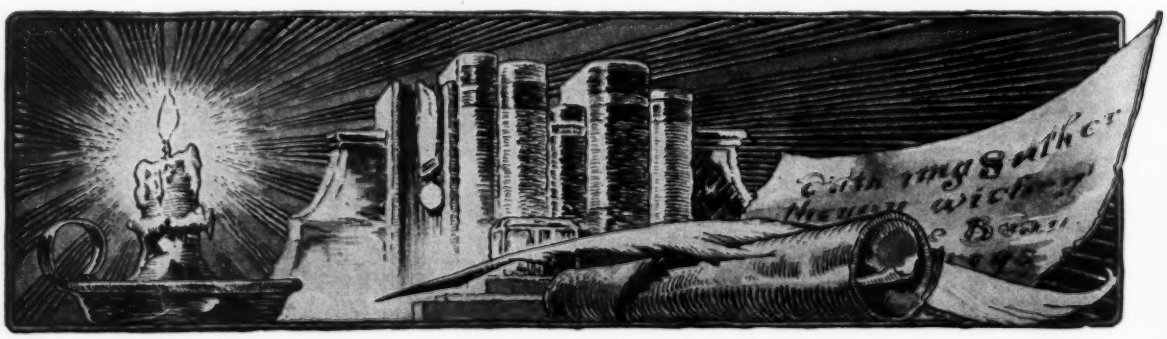
Of course advertising plays a prominent part in his merchandising scheme. This takes several forms, including newspaper, direct-by-mail and personal advertising. One of his ideas is to have the words "plumbing and heating" on his cuts made up so they will appear to have been made out of pipe. This gives his signature a distinction that makes it stand out in competition with other advertisements. The idea is carried out on his stationery and business cards as well.

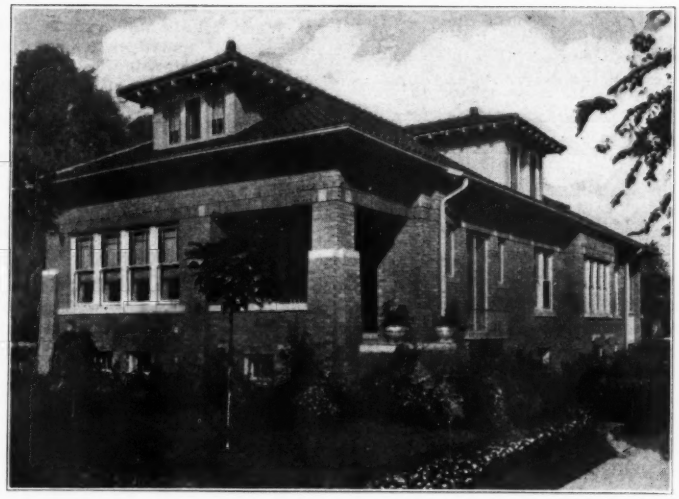
The views of the new showroom, reproduced herewith, will give you an idea of the way this has been laid out. One shows the right side of the showroom, as one enters from the street. Note the well arranged display case that is bound to attract a prospect's eye as the door on the right is opened. An attractive boiler helps set off the bathroom with shower that is installed in the corner. Next is an attractive sink and tray combination, with a water heater at the left. The other shows a slightly different angle, bringing the corner more into prominence. The third photograph shows Mr. Singleton at his desk near the back of the room. Note above the desk the attractive displays, including accessories, and even toilet paper. We have often wondered why master plumbers did not sell toilet paper. It seemed to us that the man who installs the toilet should make the sale of accessories. Back of the owner you will notice a convenient cabinet housing small parts, and the up-to-the-minute cash register.

In the show windows, articles of cheaper grade are usually displayed, the better (and higher priced) items being inside. It is thus quite often possible for the salesman to persuade those who have been attracted by the low priced things in the window to purchase something better. Four different window combinations have been worked out, so that frequent changes are possible. Salesmanship is used on the better grade fixtures. For instance, Mr. Singleton always quotes the price on a lavatory stripped. Then he is able to tell the prospect how much it will cost with different kinds of trimmings, etc., and thus arrive at the combination most attractive to the customer's tastes and purse.

Speaking of salesmanship, Mr. Singleton believes "Every shop should be equipped with a salesman. Possibly this salesman is a bookkeeper as well, or a stenographer, or maybe it is the 'boss' himself. But no plumbing shop worthy of the name is without the services of someone who can sell goods, and sell them at a profit to the firm."

It seems to me that the man, who can build a volume of sales in the smaller items he handles, may safely be left to work out his larger merchandising problems, as Mr. Singleton has done.





**How much radiation does this house need?**

*How would you*

# Figure Radiation

*for this job?*

*By* SAMUEL R. LEWIS

MY FRIEND Arthur phoned me several times recently to ask my decision as umpire between himself and Bill Foot over a question of the way properly to allow for leakage in figuring radiation.

My answer, of course, was that the engineer should know the infiltration rate of the exposed wall, and that he should know the linear feet of window crack and the width of the crack, and that he should know the minimum wind velocity, so that he could figure and not guess at the infiltration.

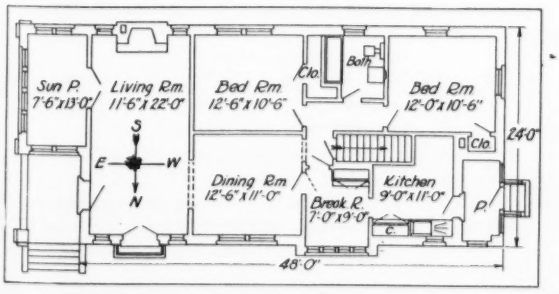



**Fig. 1**

Now I know that for ordinary working purposes it is customary to allow for leakage by figuring one air change if one side of the room is exposed, and to add something if two sides are exposed, and to add something more if three sides are exposed.

I will admit that it is troublesome to figure the leakage all out on the basis of infiltration loss per unit of crack in ordinary daily service. It also is hazardous to guess that a certain number of air changes of the cubic contents will occur. Such a practice savors too much of the old thumb rule habit, and in the last analysis cubic contents seems to have nothing whatever to do with infiltration.

If the room is long and narrow, with exposure at one end, the infiltration will have a very different value from that which will be in effect if the exposure of the long and narrow room is at one of the long sides. In both cases the infiltration apparently will be governed by the amount of outside surface and not by cubical contents. Therefore, I cast about me for a representative house of which I had a plan and a photograph, and I spent several days figuring out the radiation for heating that house under some of the generally accepted formulas.

### Attractive Bungalow Used as a Basis

The building is an attractive bungalow in which most of us would be proud to live.

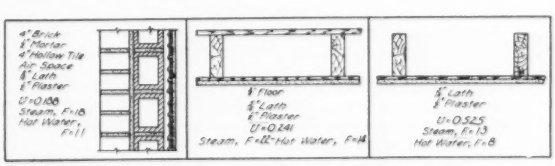



**Fig. 2**

Let us assume first that the main outside walls are of 4-inch brick, backed with 4-inch hollow tile, plastered. The ceiling under the attic around the playroom and under

Table No 1
Uninsulated

Physical Conditions

| Name | Size | Orientation | Net Wall | Floor | Ceiling | Glass | Contents | | |
|---|---|---|---|---|---|---|---|---|---|
| SUN PORCH | 7½ X 13 | SE | 105 | 97 | 55 | 90 | 825 | | |
| LIVING ROOM | 11½ X 22 | N-S | 182 | 253 | 130 | 81 | 2150 | | |
| DINING ROOM | 12½ X 11 | N | 76 | 137 | | 30 | 1164 | | |
| BED ROOM | 12½ X 10½ | S | 76 | 131 | | 30 | 1113 | | |
| BATH | 4 X 7 | S | 41 | 28 | 28 | 10 | 297 | | |
| BED ROOM | 12 X 10½ | SW | 146 | 126 | 75 | 25 | 1071 | | |
| KITCHEN | 9 X 11 | NW | 122 | 99 | 66 | 31 | 841 | | |
| BREAKFAST | 7 X 9 | N | 44 | 63 | 42 | 32 | 535 | | |
| PLAY ROOM | 40 X 12 | NSEW | (10' Wall outside 808 Wall towards attic) | | 720 | 60 | 5040 | | |

the attic over the playroom on the second story, is plastered on wood lath. The floor is one thickness of wood above a plastered basement ceiling.

The glass is single thick. The exposed sides of the playroom are assumed as clapboard over sheathing and paper on 3½-inch studs plastered on the inside.

The partitions between the playroom and the attic are plastered on studs.

## CHICAGO MASTER STEAMFITTERS' RULES

WE SHALL consider first the Chicago Master Steam Fitters' rules. They are as follows, as of July 28, 1925:

### Rules for Computing Radiation Quantities for Heating Plants

Schedule for computing minimum quantities of steam radiation at 70 deg. F. with outside temperature at minus 10 deg. F.

1 foot of radiation for every 300 cubic feet of contents, plus

1 foot of radiation for every 15 square feet net exposed wall surface, plus

1 foot of radiation for every 2 square feet of single glass surface, plus

1 foot of radiation for every 4 square feet of double skylight.

For all rooms with plastered ceilings and unheated air space between ceiling and the roof, add 1 foot of radiation for every 30 square feet of ceiling area.

For all rooms with ceiling plastered on roof joist, add 1 foot of radiation for every 20 square feet of ceiling area.

Table No 2
Uninsulated
70° in -10°

Chicago Master Steam Fitters

| | | | Net Wall | Floor | Ceiling | Glass | Contents | # Rad. |
|---|---|---|---|---|---|---|---|---|
| DIVISORS | | | 15 | 30 | 30 | 2 | 300 | |
| SUN PORCH | | | 7 | 3 | 2 | 45 | 2 | 39 |
| LIVING ROOM | | | 12 | 8 | 4 | 40 | 7 | 71 |
| DINING ROOM | | | 5 | 4 | | 15 | 4 | 28 |
| BED ROOM | | | 5 | 4 | | 15 | 4 | 28 |
| BATH | 1.007 | +15 | 3 | 1 | 1 | 5 | 1 | 13 |
| BED ROOM | SW exp | +10 | 11 | 4 | 2 | 12 | 3 | 35 |
| KITCHEN | NW exp | +10 | 6 | 3 | 2 | 15 | 3 | 34 |
| BREAKFAST | | | 3 | 2 | 1 | 16 | 2 | 24 |
| PLAY ROOM | Exp 4 sides | +10 | 6 | | 24 | 30 | 16 | 130 |
| | Against attic | | 47 | | | | TOTAL | 430 |

For all rooms with open joist roof construction, add 1 foot of radiation for every 10 square feet of roof.

For all rooms having concrete roof, add 1 foot of radiation for every 6 square feet of roof.

For all floors except wood construction having no basement or air space, 1 foot of radiation for every 30 square feet of floor area.

All bathrooms to be heated to 80 degrees.

Add 10 per cent to all westerly wall and glass exposures.

Where radiators are placed under seats or behind grills, add 20 per cent additional radiation.

Where radiators are placed in open recesses, add 10 per cent additional radiation.

For indirect radiation without fan system, add 50 per cent additional radiation.

For direct-indirect without fan system, add 25 per cent additional radiation.

Where single pipe coils or single cast-iron wall radiation is placed on side walls, 80 per cent of the required amount of standard column radiation may be installed. Size of boiler and piping, however, shall be based on standard column radiation requirements. Ceiling coils to be considered as standard column radiation.

In measuring glass surface, the full opening in wall shall be figured. Outside door openings shall be taken as glass.

For computing minimum quantities of hot water radiation at 70 degrees F., with outside temperature at minus 10 degrees F., add 60 per cent to amount necessary for steam.

For computing minimum quantities for vapor systems at 70 degrees F. with outside temperature at minus 10 degrees F., add 20 per cent to amount necessary for steam.

A vapor system is defined as a two-pipe steam system which has the return lines open to atmosphere with no valve at the return connections of heating units which will close against steam.

For heating to temperatures other than minus 10 degrees F. to 70 degrees F., multiply actual amount of radiation required by the following co-efficients:

Table No 3
Uninsulated
70° in Zero

American Society of Heating + Ventilating Engineers

| | Exposure | | Net Wall | Floor | Ceiling | Glass | Contents | Total BTU | # Rad. |
|---|---|---|---|---|---|---|---|---|---|
| VALUE OF K | | | .277 | .234 | .502 | 1.13 | Dn Air Change | | |
| MULTIPLIERS | | | 19.5 | 234 / 39 = 6 | 502 / 25 = 19.5 | 79.1 | 126 | | |
| SUN PORCH | SE | | 2026 | 673 | 330 | 7119 | 10398 | 11987 | 50 |
| LIVING ROOM | N-S | | 3500 | 2277 | 2420 | 6400 | 2700 | 17297 | 72 |
| DINING ROOM | N | | 1460 | 1235 | | 2300 | 1465 | 6338 | 26 |
| BED ROOM | S | | 1460 | 1179 | | 2300 | 1400 | 6419 | 27 |
| BATH | S | | 780 | 245 | 612 | 791 | 372 | 2880 | 11 |
| BED ROOM | SW | | 2200 | 1134 | 1315 | 1975 | 1350 | 8974 | 37 |
| KITCHEN | NW | | 2360 | 891 | 1136 | 2425 | 1040 | 7892 | 33 |
| BREAKFAST | N | | 849 | 567 | 735 | 2510 | 675 | 5336 | 22 |
| PLAY ROOM | NSEW | | 1274 + 1536 + 1536 = 4346 / 19.5 = 223 | | 12600 | 9796 | | 36892 | 152 |
| | | | 5422 + 3600 = 9022 / 79.1 = 114 | | | | 6350 | Total | 430 |

—10 degrees to 80 degrees.....1.13
—10 degrees to 75 degrees.....1.06
—10 degrees to 70 degrees.....1.
—10 degrees to 65 degrees..... .94
—10 degrees to 60 degrees..... .87
—10 degrees to 55 degrees..... .81
—10 degrees to 50 degrees..... .75
—10 degrees to 45 degrees..... .69
—10 degrees to 40 degrees..... .62

The above schedules of quantities are commensurate with good heating results for the average building of average construction, but by no means to be constructed as guarantees of the proper quantities of radiation or boiler sizes necessary to heat every building, as extraordinary conditions will of course require additional radiation or boiler capacity.

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The following items only seem to concern the present case:

$$(1)\quad \frac{\text{Contents}}{300} = R$$

$$(2)\quad \frac{\text{Exposed wall}}{15} = R$$

$$(3)\quad \frac{\text{Glass}}{2} = R$$

Table No 4
Uninsulated
70° in Zero

Illinois Master Plumbers Association

| | | | Net Wall | Floor | Ceiling | Glass | Contents | | # Rad |
|---|---|---|---|---|---|---|---|---|---|
| PAGE + EXAMPLE | | | P12 "D" | P14 "C" | P13 "A" | | | | |
| DIVIDERS | | | 10 | 22 | 15 | 2.8 | 190 | | |
| SUN PORCH | | | 3.0 | 4.4 | 4.1 | 52. | 4.3 | | 50.6 |
| LIVING ROOM | | | 10 | 11.5 | 10.6 | 29 | 11.3 | | 72.4 |
| DINING ROOM | | | 4.2 | 6.2 | | 11. | 6.1 | | 27.5 |
| BED ROOM | | | 4.2 | 6. | | 11. | 5.9 | | 27.3 |
| BATH | | | 2.3 | 1.6 | 2.7 | .36 | 1.5 | | 11.7 |
| BED ROOM | | | 9.2 | 5.7 | 5.8 | .69 | 3.6 | | 35.2 |
| KITCHEN | | | 6.0 | 4.5 | 5.1 | 11. | 4.4 | | 31.0 |
| BREAKFAST | | | 2.4 | 2.9 | 3.2 | 1.43 | 2.6 | | 22.8 |
| PLAY ROOM | | outside | 101 ft. | | 55 | 21 | 26.5 | | 137.3 |
| | | inside | 89 47 | | | | | TOTAL | 436.0 |

$$(4)\quad \frac{\text{Ceiling exposed to unheated attic}}{30} = R$$

$$(5)\quad \frac{\text{Cold floor}}{30} = R$$

With reference to (5) apparently we need figure no allowance for the floors if they are of wood and are above a basement. I assume for our purposes, however, that we will cover the basement mains and that the basement will be pretty chilly; so will allow the same loss there as for the attic. Perhaps there will be a crawling baby every little while in this house.

I have assumed certain physical conditions as to sizes of windows, orientation, etc., as set forth in Table 1.

There is a cross-shaped playroom in the attic which is finished and heated, with windows at each end of each branch of the cross. Thus a part of the ceiling of each first story room impinges on the unheated attic.

The Chicago Master Steamfitters' table assumes ordinary construction, and the quantities of radiation for each room using the standard divisors and percentages for exposures are shown in Table 2, except that after finding such a great deficiency for the playroom, due to no allowance being made by the Chicago Steamfitters' rules for a thin wall against a cold attic, I have made the allowance for these walls. If I had not added the same 47 square feet allowance for this room in Tables 2 and 4 as in Tables 3 and 5, the thumb rules would be clear out of the picture.

There is no provision in these Chicago Master Steamfitters' rules for figuring building insulation. These rules are intended as a simple guide to check the designers'

Table No 5
Uninsulated
70° in Zero
Samuel R. Lewis
Same Factors as Table 3

| Name | Orientation | % | Net Wall | Floor | Ceiling | Glass | Wall+Glass | Total B.T.U. | # Rad |
|---|---|---|---|---|---|---|---|---|---|
| SUN PORCH | SE | 40 | 2026 | 875 | 930 | 7119 | 9145 | 14604 | 61 |
| LIVING ROOM | NS | 50 | 3500 | 2277 | 2420 | 6400 | 9900 | 19547 | 81 |
| DINING ROOM | N | 70 | 1460 | 1230 | | 2380 | 3840 | 7761 | 32 |
| BED ROOM | S | 50 | 1460 | 1179 | | 2380 | 3840 | 6171 | 26 |
| BATH | S | 30 | 790 | 315 | 612 | 791 | 1581 | 2902 | 12 |
| BED ROOM | SW | 55 | 3200 | 1134 | 1315 | 1975 | 5175 | 10469 | 44 |
| KITCHEN | NW | 70 | 2360 | 891 | 1156 | 2425 | 4785 | 10716 | 45 |
| BREAKFAST | N | 70 | 849 | 567 | 735 | 2510 | 3359 | 7006 | 29 |
| PLAY ROOM | NSEW | 50 | 1886 / 11700 | | 12600 | 4746 | 6642 | 33663 | 140 |
| | | | | | | | | TOTAL | 470 |

figures and are minimum. They presume, no doubt, on the building being somewhat protected by its neighbors, and on the heating being maintained continuously. They do not mean much to us in our present study unless we have something with which to compare them.

## RADIATION DATA OF THE A. S. H. V. E.

THE 1928 data published by the American Society of Heating and Ventilating Engineers (hereinafter referred to as A. S. H. V. E.) suggests that radiation shall be computed strictly on the heat unit basis, and gives formulas based on laboratory research for computing heat transmission. These data also give a great many examples of construction with various materials and different kinds of insulation, so that it is comparatively easy for anyone to figure the heat loss of any building.

According to these data, a person having figured the heat losses by the glass, wall, ceiling and floor factors, may calculate the infiltration by definite allowances per foot of window and door crack, or may assume the infiltration as we did for Table 2 as some number of changes of the contents of the room. These data have little to say about the effect of wind or lack of sunshine due to orientation. For purposes of comparison we have calculated on one air change per hour in each of the rooms and have paid no attention to orientation. The temperature in the unfinished part of the attic is assumed as 35 degrees F. The multipliers for the second story playroom walls are 17.5 for the outside and 8 for the inside walls. We have allowed for 70 degrees in zero weather even though Table 2, the Chicago Master Steamfitters' computation, claims to be for ten below zero. The values of K are for heat transmitted per degree difference per square foot.

By this method we find that 430 square feet of steam

Table No 6
Tabulation of Figures for Uninsulated House

| | | IMPA | ASHVE | CMSFA | SRL | Average | Mills |
|---|---|---|---|---|---|---|---|
| SUN PORCH | SE | 51 | 50 | 59 | 61 | 55 | 34 |
| LIVING ROOM | NS | 72 | 72 | 71 | 81 | 74 | 60 |
| DINING ROOM | N | 27 | 26 | 28 | 32 | 28 | 25 |
| BED ROOM | S | 27 | 27 | 28 | 26 | 27 | 24 |
| BATH | S | 12 | 11 | 13 | 12 | 12 | 8 |
| BED ROOM | SW | 35 | 37 | 35 | 44 | 38 | 25 |
| KITCHEN | NW | 32 | 33 | 34 | 45 | 36 | 25 |
| BREAKFAST | N | 23 | 22 | 24 | 29 | 24 | 21 |
| PLAY ROOM | NESW | 138 | 132 | 138 | 140 | 147 | 61 |
| TOTAL | | 437 | 430 | 430 | 470 | 445 | 303 |

radiation will be needed to heat this residence to 70 degrees in zero weather, as compared with the Chicago Master Steamfitters' claim of 430 square feet. There seems to be no outstanding differences per room for the standard or usual conditions, but when we come to the unusual exposure of the sun porch the rule of the Chicago Master Steamfitters' Association is higher, while for the unusual play room condition the A. S. H. V. E. rule still calls for 14 square feet more radiation after we have arbitrarily added the 47 square feet referred to before.

## THE INSULATION DATA OF THE ILLINOIS MASTER PLUMBERS ASSOCIATION

THE ILLINOIS Master Plumbers Association recently has devised and published new short-cut rules for figuring radiation, with modifications to allow for various kinds of building insulation. In order that some check may be had on these rules, I have calculated the radiation for this building as though it were uninsulated, using the Illinois Master Plumbers Association rules, and the results are shown in Table 4.

The dividers here were developed by rational formula from the data of the A. S. H. V. E., but these rules are not as flexible as the direct B.t.u. basis, since only a limited number of variations ordinarily are covered. No attention is paid to orientation. A vague sort of indeterminate allowance for leakage by guessing at air changes is suggested, similar to that mentioned alternatively in the A. S. H. V. E. data. For computing the radiation in the playroom after finding a great deficiency in the rule, I used divider 15 for the outside wall and divider 19 for the wall against the attic, which equalize with the A. S. H. V. E. rule for the different structural conditions here.

Table 4 gives 437 square feet of radiation to heat the house to 70 degrees in zero weather. The rooms check fairly well with the A. S. H. V. E. formula, as would be expected, the unusual playroom accounting for most of the divergence.

I observed carefully the length of time consumed and the liability to errors, using the scheme in Table 4 as compared with Table 3. I do not believe that the plumbers' tables save anything in particular over the A. S. H. V. E. methods, while the infinite flexibility of the A. S. H. V. E. method commends it. With the A. S. H. V. E. method a figure can be developed quickly for any temperature difference using almost any conceivable kind and thickness of material.

The figures in Tables 2, 3 and 4 are for continuous heating. They do not take account of the extra capacity we find desirable for buildings which are heated intermittently. They do not admit, apparently, that rooms on the south side of a house are less likely to be colder than are similar rooms on the north or west. They seem to suggest that the air contents of a room has everything to do with how much air leakage takes place through the outside walls of the room.

Table No 7 — INSULATED — 70° in Zero

Illinois Master Plumbers Association

| PAGE 2 EXAMPLE | | | Net Wall | Floor | Ceiling | Glass | Contents | # Rad. |
|---|---|---|---|---|---|---|---|---|
| | | | P12 #34 | P14 #10 | P13 #8 | | | |
| DIVIDERS | | | 24 | 35 | 32 | 28 | 190 | |
| SUN PORCH | | | 43 | 27 | 17 | 52 | 43 | 45 |
| LIVING ROOM | | | 76 | 73 | 43 | 29 | 113 | 60 |
| DINING ROOM | | | 32 | 39 | | 17 | 61 | 30 |
| BED ROOM | | | 32 | 36 | | 17 | 59 | 29 |
| BATH | | | 17 | 1 | 11 | 36 | 15 | 9 |
| BED ROOM | | | 7 | 36 | 23 | 89 | 56 | 27 |
| KITCHEN | | | 31 | 28 | 2 | 11 | 44 | 25 |
| BREAKFAST | | | 18 | 18 | 13 | 115 | 28 | 19 |
| PLAY ROOM | | | 120-24 = 96 / 206-30 = 236 | | | 225 | 21 | 265 / TOTAL | 105 / 349 |

Note — The side walls of the play room figured at 2x (P7 #4)

I have for many years used the B.t.u. method of computing radiation. I have designed the heating of public buildings, intermittently heated, and satisfied myself long ago that I would be in trouble every time I failed to provide extra radiation for the north and northwest rooms. I concluded that infiltration or extra transmission, due to wind or lack of sun, was influenced by orientation. I decided that infiltration must be proportional to the amount of exposed wall and glass through which the air has a chance to pass, and that cubic contents in itself has nothing to do with infiltration. So when a large square office building in the then young and still bald-headed city of Gary, Ind., came along, I arranged for a very careful study of the heat losses in extremely cold weather.

Table No 8 — INSULATED — 70° in Zero

American Society of Heating + Ventilating Engineers

| | | | 1 Net Wall | 2 Floor | 3 Ceiling | 4 Glass | Contents | TOTAL BTU | # Rad. |
|---|---|---|---|---|---|---|---|---|---|
| VALUE OF K | Note — The colored walls of the play room have a heat value of 15% of the inside walls | | 151 | 131 | 121 | 115 | | | |
| MULTIPLIERS | | | 10.7 | 4.6 | 0.5 | 79.1 | 1.26 | | |
| SUN PORCH | | | 1112 | 445 | 450 | 7119 | 1039 | 10163 | 42 |
| LIVING ROOM | | | 1950 | 1160 | 1170 | 6400 | 2700 | 13380 | 52 |
| DINING ROOM | | | 615 | 630 | | 2360 | 1465 | 5290 | 22 |
| BED ROOM | | | 615 | 600 | | 2380 | 1400 | 5195 | 22 |
| BATH | | | 440 | 160 | 297 | 791 | 372 | 2060 | 9 |
| BED ROOM | | | 1780 | 580 | 635 | 1975 | 1350 | 6320 | 26 |
| KITCHEN | | | 1305 | 455 | 560 | 2425 | 1060 | 5805 | 24 |
| BREAKFAST | | | 470 | 290 | 356 | 2510 | 675 | 4301 | 16 |
| PLAY ROOM | | | 157 x 30 = 1340 / 311 x 47 = 12900 | | 6100 | 4746 | 6330 | 31416 / TOTAL | 135 / 340 |

The radiators on all four sides in identical rooms were arbitrarily made too small and were then added to, section by section, until the four sides of the building equalized under the very severe winter conditions which we encountered. I tried to conduct some research 'way back when research was rare.

From the great mass of data which I secured on this building I developed the formula which is the basis of Table 5.

## THE METHOD USED BY THE WRITER OF THIS ARTICLE

THE BASIC heat transmission tables of the A. S. H. V. E. are used. The allowance for infiltration is assumed at 30 per cent of the heat transmission allowance through glass and exposed walls. In addition, there are added orientation factors to the sum of the loss through glass and exposed walls, added together, not cumulative, of 40 per cent on the north, 25 per cent on the east, nothing on the south and 30 per cent on the west, with interpolations for the four major intermediate orientations.

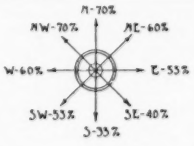
These percentage additions are set forth in the little diagram which appears just below Table 5.

Referring to Table 5, the basic multipliers are the same as in Table 3—the A. S. H. V. E. figures. The points of the compass are noted. The column "Glass and Wall" is inserted for convenience to show the sum of the heat units from Table 3 lost through glass and wall, and to which is added a percentage of itself for leakage and exposure, before the floor and ceiling factors are added. The total for the sun porch is 14,604 B.t.u., giving 61 square feet of radiation.

Table No 9 — INSULATED — 70° in Zero

Samuel R. Lewis

| Name | Orientation | % | Net Wall | Floor | Ceiling | Glass | Wall+Glass | Total B.T.U. | # Rad. |
|---|---|---|---|---|---|---|---|---|---|
| SUN PORCH | SE | 40 | 1112 | 445 | 450 | 7119 | 8231 | 12398 | 52 |
| LIVING ROOM | NE | 50 | 1950 | 1160 | 1170 | 6400 | 8350 | 14835 | 62 |
| DINING ROOM | N | 70 | 615 | 630 | | 2360 | 3195 | 6036 | 25 |
| BED ROOM | S | 30 | 615 | 600 | | 2380 | 3195 | 4752 | 20 |
| BATH | S | 30 | 440 | 160 | 297 | 791 | 1231 | 2057 | 9 |
| BED ROOM | SW | 35 | 1780 | 580 | 635 | 1975 | 3755 | 7035 | 29 |
| KITCHEN | NW | 70 | 1305 | 455 | 560 | 2425 | 3730 | 7056 | 30 |
| BREAKFAST | N | 70 | 470 | 290 | 356 | 2510 | 2980 | 5112 | 24 |
| PLAY ROOM | NSEW | 50 | 157 x 30 = 1320 / 311 x 47 = 12900 | | | 6100 | 4746 | 6060 / 28090 / TOTAL | 117 / 368 |




I am, of course, prejudiced, but I have had pretty good luck using this table, and I think it has some rational foundation. The total radiation for heating the house is computed as 470 square feet, or about 10 per cent more than the average of the other three methods, this 10 per cent perhaps being justified by the avowed purpose of intermittent heating. It will be noted that under this "S. R. L." rule, increase in radiation builds up rapidly with increase in exposure as in the sun porch. It gives less radiation for the playroom than any of the other methods except that of the Chicago Master Steamfitters' Association. For a south room it is not far away from the others. For north rooms like the breakfast room and kitchen it causes rapid increase.

Possibly more years' experience may cause some reduction in one or the other of the arbitrary percentages added to the B.t.u. determinations in the "S. R. L." rule. Recent observations indicate that the radiation required for infiltration from several hundred cases is 24 per cent of the total radiation.

There seems to be some argument in favor of the principle that exposure and leakage allowances should be based on the surface through which the leakage can occur rather than on what cubic feet of air may be bottled up behind the wall.

**(Continued on Page 51)**

The Frank Wiggins Trade School in Los Angeles, Calif.

# Plumbing Instruction in Los Angeles

FEW of the large cities of the country have undertaken such an ambitious program for the vocational instruction of their youth as has Los Angeles. Shortly after the opening of the year 1927, the Frank Wiggins Trade School began teaching classes of young men and young women in numerous trades and handicrafts. At present, instruction in a few trades is provided for and equipment for still others is under contemplation. Los Angeles has planned for the concentration of all of this vocational instruction in one building especially designed for that purpose, the Frank Wiggins Trade School.

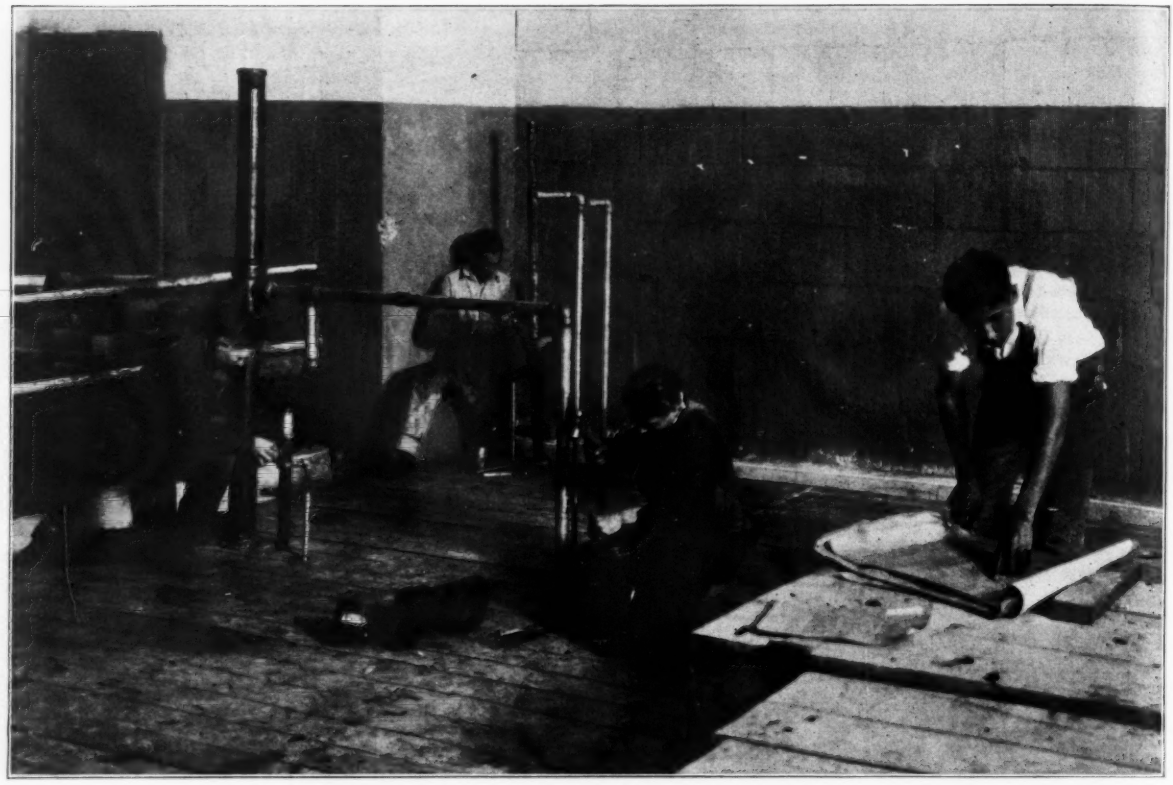
This building occupies the west half of an entire block which is bounded upon two of its sides by Venice boulevard and Olive street. Those who happen to be familiar with the geography of Los Angeles will recognize the fact that this location is in the down-town area, just on the verge of the business district. The building, which is of steel, concrete and brick construction, has its central third up to limit height, namely, twelve stories, while the two end wings at present rise but two stories in height, but will be brought up to the limit as occasion demands. The investment of the city in this structure approximates $1,500,000 up to date.

Conspicuous among the trades instruction provided for in this new building is that of plumbing. Instruction in this trade is by no means new even in Los Angeles, because there has been a plumbing class here for some two or three years, but it never assumed any considerable importance until its removal to its present location in the basement of the Frank Wiggins school. Here day and night classes are conducted, both for the purpose of training young men to take their places as helpers or "improvers" in the plumbing industry preparatory to their working through an apprenticeship to the rank of full-fledged journeymen, and for the training of men already in the plumbing industry.

The instructor in charge of the plumbing school is L. A. Miller, who, in addition to being an experienced master plumber, possesses the faculty of imparting to others the knowledge of the industry he has acquired during his years of practical experience. It is his purpose, he says: "To take young men of from 17 to 21 years of age and to give to them such intensive instruction in the fundamental principles of good plumbing that within the year allowed for this instruction in the school they will be able to enter the trade as helpers and be fully equipped to work their way into the ranks of journeymen plumbers. In other words, I want to put these young men into such shape that once they find their place in the industry they can at once begin to draw wages."

The course of instruction includes training, not only in the technical and manipulative parts of the trade, but also in blue print reading, angle measurements, elementary estimating and layout, together with a knowledge of what tools to use and when to use them on any ordinary plumbing job. In other words, as Mr. Miller says, he seeks to train his young men "to think for themselves so that when once they get out on the job, they will instinctively know how to go about it."

The equipment of the school is very complete, as respects all of the commoner tools used in the trade. In fact, the school has a full assortment of tools compar-



**Boys at work in plumbing department of the Frank Wiggins Trade School**

able to the equipment in any metropolitan shop. This tool equipment is supplemented by charts depicting all of the ordinary installations of plumbing and sanitary fixtures, many architectural blue prints of actual installations and typical examples of plumbing estimating. "Domestic Engineering" plumbing problems are used regularly. Verbal instruction is given together with blackboard illustrations of how to work out plumbing problems.

The operation of the school has received the endorsement of the Los Angeles Merchant Plumbers' Association and also has the sanction of the Plumbers' Union. Inasmuch as Los Angeles has between 1,500 and 2,000 master plumbers, it is certain that the industry here will not be overly crowded by the half hundred or so embryo plumbers which this school will turn out every year.

The basis for the technical training the boys receive in the school is the Los Angeles plumbing code, inasmuch as they will be called upon to do their first real work in Los Angeles. Hypothetical installations are given to the students and they are expected to fill out blanks in answer to the problem proposed. After the blanks have been filled out they are checked by the instructor, and the student then proceeds to do the job in the working space provided at the school.

It is the opinion of Mr. Miller that this is the best system by which to teach the fundamental principles of plumbing. In addition, an attempt is made to train every student individually. He declares that it is impossible in a trade school to grade the students according to any fixed formula, and that it is necessary to consider each student as being in a class by himself. Thus the most is made of the capability of each student, while individuality is strengthened through the study of his ability and capacity for assimilating instruction.

## What Causes Clinkers?

The clinkering characteristic is one of the factors that determines the relative availability and usefulness of a coal and the operation costs of a boiler house. It requires, however, very close observation and detailed records to be able to separate the troubles and expenses due to the ash in the coal from those caused by the burning characteristics of the combustible and the size and the physical condition of the coal as fired. The method of burning and the mechanical equipment are additional factors that make it difficult to generalize.

The clinkering characteristics of coal and the properties of the coal ash have been studied by the United States Bureau of Mines to determine whether any relationship exists; and the results of this work have been published. A few coals have also been burned in a large heating boiler and the resultant clinker measured. Such tests have been too few in number to warrant general conclusions, but they show reasonable concordance between clinker measurements of the experimental furnace and the heating boiler.

## Six Ways to Save Fuel

1. Do not heat unused rooms.
2. Let in sunshine.
3. Pull down shades early at night.
4. Do not leave doors open in rooms that are being ventilated at night.
5. Do not overheat the house. 65 to 70 is sufficient if the proper amount of moisture is in the air.
6. Get a thermometer and watch the weather.

# Measuring Heat Effect

*By* E. A. MAY

DOES the total amount of steam condensed by a radiator furnish a true measure of its heating effectiveness under all conditions of location? Or does it furnish a real basis for comparison between several radiators varying in height?

It is presumed, of course, that steam temperatures and air surrounding the radiators are alike when making comparative analyses.

Stating our inquiry in another form—is it safe to use coefficients determined by condensation tests to estimate the quantity of radiation of a certain type, height and number of sections necessary to heat a given space without regard to location of radiator or the manner of its decoration?

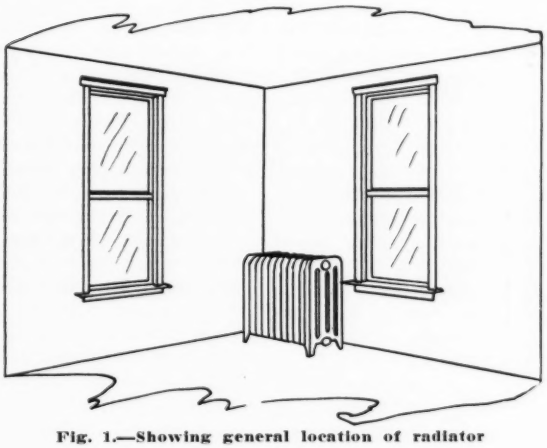


Fig. 1.—Showing general location of radiator

These questions, placed before a number of heating engineers, would doubtless bring out quite a discussion. The most general reply probably would be somewhat in the nature of a counter question, such as "How else can we measure the efficiency of a radiator?" or "Tests having shown a difference in amount of steam condensed under similar conditions (see Figs. 1 and 2), why shouldn't we take these variations into account when we figure our radiator quantities?"

### CONSIDER RESULTS OF THESE TESTS

IT may be of interest to consider the result of several tests and make a general application of the results so that we can discuss the question at an angle that would appear to have been overlooked or, at least, an angle that has seemed to be of no importance. This angle has led some engineers to present such questions as appear at the opening of this article.

A certain series of tests was made. These tests were sufficient in number and were conducted under conditions which would give accurate data. Certain coefficients were obtained.

They were based on the actual condensation and under steam temperature and air temperature which were similar. These coefficients were as follows: 1.56, 1.72, 1.66, 1.43, 1.38, 1.67, 1.62, or the B.t.u. emitted per square foot of surface per hour, per degree difference in temperature between the steam in the radiator and the air surrounding the radiator (air of room). These coefficients with the temperature difference existing gave as the emission per square foot of surface per hour the following in B.t.u.: 234, 258, 249, 214.5, 207, 250.5, 243. The temperature of the steam during tests was as recalled, 219 degrees, giving 966 B.t.u. available per pound of condensation, or, expressing the condensation in terms of steam condensed per square foot per hour, we have .242; .267; .257; .222; .214; .259; .251; average .244—approximately the established factor of .25 generally accepted for practical use.

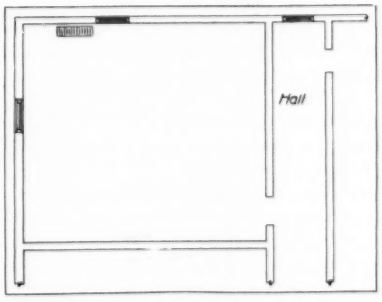



Fig. 2.—Plan of room

In order to analyze their results, let us assume the heating requirement to be 10,350 B.t.u. per hour; then, with the heat emission factors given above, the radiation required expressed in square feet would be 10,358 divided by 234,258, etc.= 44.2; 41.5; 48.2; 50; 41.3; 42.5 sq. ft.

But now comes a most interesting development. The tests referred to consisted of tests of a "50-ft. radiator" under exactly similar conditions of steam temperature as stated at the beginning of the article, but with different conditions as to covering or decorating.

Peculiarly, the temperature of the room was maintained to the same degree by the heat emitted from the radiator under each test condition.

How, then, can we explain the differences in the coefficients and how can we agree with the opinions expressed that quantity of condensation indicates the relative efficiency under like temperature differences? Certain it is that in these tests the efficiency was inversely as the condensation, for it is manifest that the test showing the least condensation indicates that the greater percentage of the heat emitted was used in heating the room, and if it required only that amount to actually heat, then in the other tests a larger percentage of the heat emitted was lost or wasted so far as its room heating effect was concerned.

Let the comparison be carried further and consider that the test showing an emission of 207 B.t.u. per square foot per hour be taken as standard for the purpose of further analysis, then, according to the emissions obtained, test with 234 B.t.u. emission would indicate that the heat emitted from 50—44.2 or 5.8 times 234 or 1,357 B.t.u. were actually unused for heating.

Test No. 2—258 B.t.u. shows (50—40.1)—9.9×258 or 2,554 B.t.u. waste.

Test No. 3—249 B.t.u. shows (50—41.5)—8.5×249 or 2,116 B.t.u. waste.

Test No. 4—214.5 B.t.u. shows (50—48.2)—1.8×214.5 or 386 B.t.u. waste.

Test No. 5—207 B.t.u. shows standard for comparison, 0 B.t.u. waste.

Test No. 6—250.5 B.t.u. shows (50—41.3)—8.7 × 250.5 or 2,179 B.t.u. waste.

Test No. 7—240 B.t.u. shows (50—42.5)—7.5×243 or 1,822 B.t.u. waste.

Radiator in test No. 1 was enclosed in a metal box so arranged as to allow free movement of air, increasing to some degree the surface for radiation but at a decreased

temperature. (See Fig. 4 for this arrangement.)

Test No. 2 was with the bare, undecorated radiator.

Test No. 3 was same radiator undecorated, but with a sheet of asbestos board between radiator and wall. (See Fig. 3.)

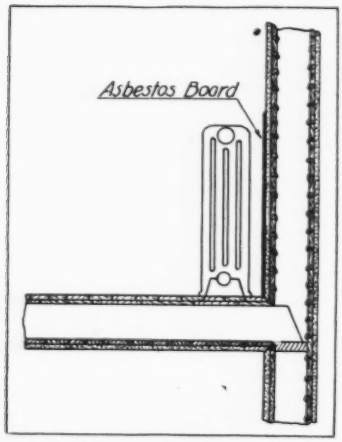



**Fig. 3.—Showing location of insulating board used in tests 3, 5 and 7.—In tests 2, 4 and 6, insulating board was removed**

Test No. 4, the radiator was coated with aluminum, but with insulation board removed from wall.

Test No. 5, same as No. 4 with insulator board replaced.

Test No. 6, radiator was coated with maroon japan and with insulator board removed.

Test No. 7, same as No. 6 with insulating board replaced.

It will be noted that the decrease in condensation when the insulating board was in place between radiator and wall was reasonably close, but it shows further that the radiation loss through walls is of some moment and does not appreciably enter into the heating of the room (especially that lost through external walls). How much more must the loss through the window affect the total condensation, especially when the radiator is so located that it may be said to "see the glass." Since the temperature of objects outside of the building will be much lower than the inner face of the walls, and as the temperature of the receiving body has a direct influence on the amount of heat due to radiation, and since these radiant rays pass through the glass they are, of course, losses from a heating effect standpoint.

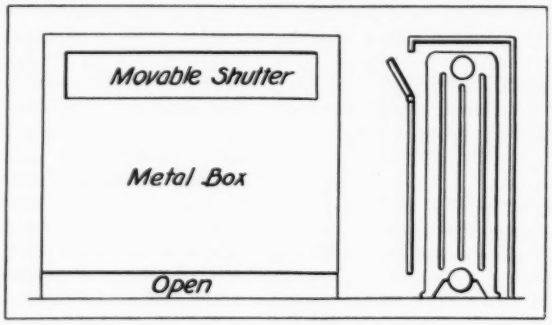



**Fig. 4.—Type of box used in test No. 1**

It has been found by test that the material used in decorating the radiator has its influence on the amount of condensation, and this is believed by some to be due to a change in the radiant effect, and not in the convective effect, increasing as the surface more nearly approaches a black body (the bare radiator may be said to be a black body), but as the reflective ratio increases, the condensation increases. Or rather, to state it in another form, a greater amount of the total heat emitted from the radiator is actually used as heating effect so that the tests above indicate that, considering heating effect, test No. 5 shows the greatest economy and therefore has the greatest heating efficiency.

It further shows that if coefficients are to be used that are based on condensation tests under certain conditions, then a correction factor or, to coin a term, a "wastage" factor must be used for conditions other than those corresponding to the test condition such as location, etc.

It may well be asked why, then, are satisfactory results obtained when coefficients established for varying heights, widths and lengths are used? The principal reason, it is believed is due to the fact that actual room heat losses are undoubtedly much lower than are generally calculated, and in addition, so many factors of safety are used that the amount of radiation installed is sufficient to cover heat loss and wastage irrespective of the manner of calculating quantities, so that using the average emission factor of 240 B.t.u. per square foot per hour for radiation in still air will give just as satisfactory heating results. But as further experiments are made to determine heat loss factors for various building materials, and as the engineering profession begins using these more exact heat loss coefficients, then it is believed that it will be found that the radiator heat emission coefficients referred to above will be found wanting and it will be necessary to revise or abandon them unless there can be established some means for determining the wastage factor allowance.

It is, of course, not the purpose of this article to suggest that the use of varying coefficients be entirely abandoned, but rather to suggest that in making tests that some method be used whereby the heating effects may be observed and compared rather than to devote the entire testing program to the determination of condensing effects under set conditions.

It may be recalled that Professor John R. Allen, some time before his death, conducted a series of tests to determine relative condensing effects and as a result of those tests made the statement that, "Were it practical, the most ideal location of a radiator to effect the greatest condensing effect would be the center of the room," and the tests referred to in this article would lead to the same conclusion. For, if located in the center of the room, the radiator would "see" the greatest amount of glass and outside walls and, in consequence, the radiation would increase, the condensing effect be greater and the heating effect but LITTLE increased, while the waste heat would be greatly increased. Would it not, therefore, be well to consider the matter along the lines suggested above? There may be many whose interpretations of the tests would be different, in which case it would be interesting

**(Continued on Page 48)**

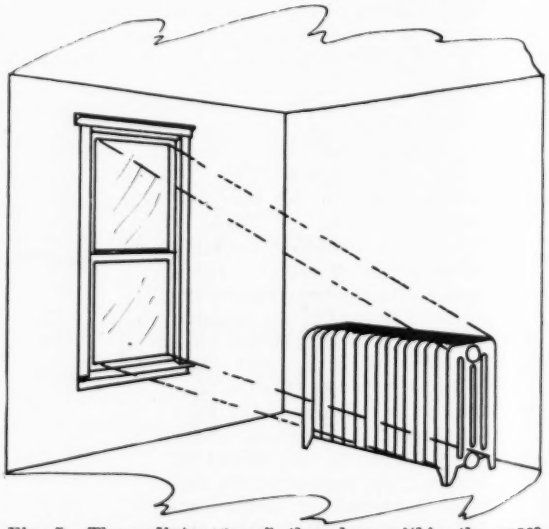


**Fig. 5.—The radiator "sees" the glass within the space enclosed by the dotted lines**

# The Schoolmaster

# Comments on Several Plumbing Problems

SEVERAL solutions for plumbing problems have been received recently which relate to problems published some weeks ago. They are:

Figs. 1, 3 and 4.—Wm. G., Allentown, Pa.

Figs. 5 and 6.—C. D. Bates, Oak Park, Ill.

Figs. 7 and 8.—W. D. R.

The first step in working the problem out was to locate the stacks that were to serve the groups of fixtures indicated on the plans, following which the drainage piping was to be shown on the basement plan. The final requirement was the making of an elevation or elevations showing the complete plumbing installation for this building.

**From Allentown, Pa.**

Fig. 1 shows the locations of stacks and the basement layout, and as far as we can see, they are O. K.

Instead of making a single isometric elevation, covering the entire installation, the work is shown in three separate elevations, Figs. 2, 3, and 4, each drawing taking a different part of the work. This method has not been followed to any extent in the Schoolmaster work, but seems to us to be an excellent plan, one that overcomes much of the confusion sometimes to be found in an isometric elevation covering a large installation.

As will be noted, Fig. 2 takes stacks A and B, Fig. 3 stack C, and Fig. 4 stack D. As far as we can see, the general layout is correctly made, the floor lines and lines of pipe being drawn at correct angles. Correct horizontal

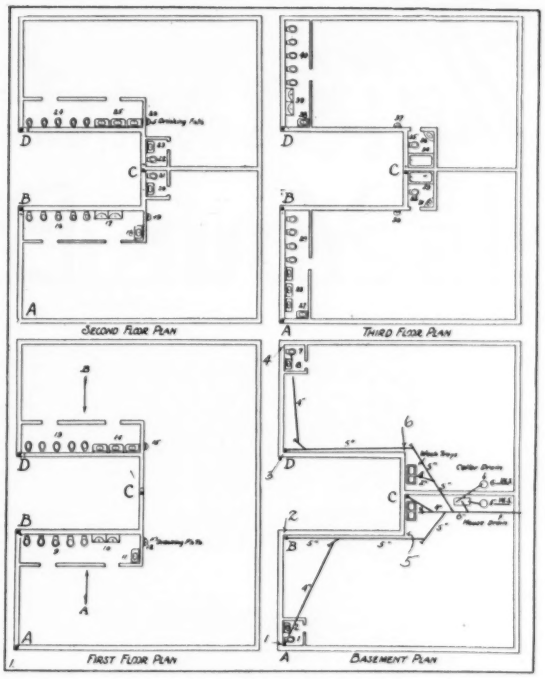



**Fig. 1**

measurements do not appear to have been taken, however. For instance, referring to Fig. 1, the distance 1-2 is the same as 3-4; then the distance 1-2 in Fig. 2 should measure the same as the distance 3-4 in Fig. 4. The two distances are far from being the same in these two elevations it will be seen, and the work is incorrect to that extent. Likewise, in Fig. 1, basement plan, the distance 1-2 is greater than 5-6, but 5-6 in Fig. 3 is greater than 1-2 in Fig. 2. In other words, horizontal measurements in the three elevations are not according to the same scale. Therefore, while the idea of the piping and connections is correctly shown in the three elevations, the fact of the variations in scale would make it impossible to get the exact truth from them. The point of this criticism is that

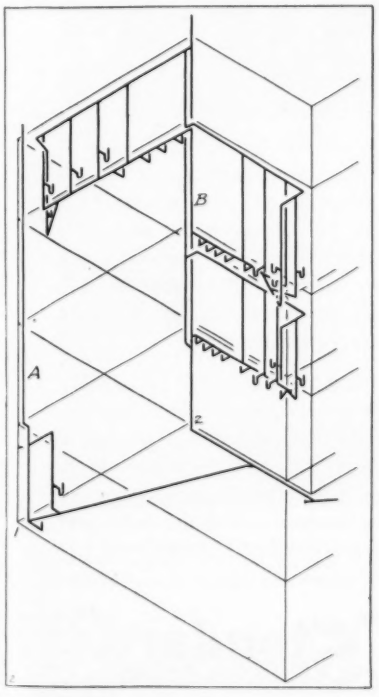


**Fig. 2**

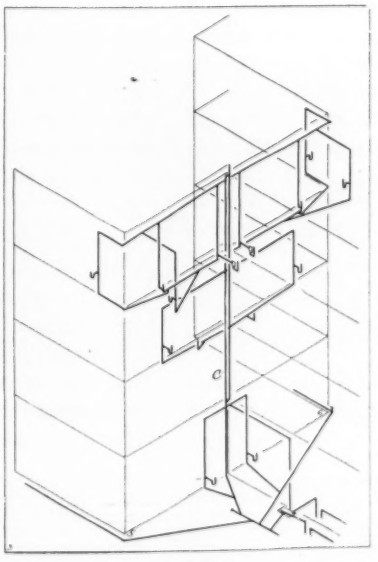


**Fig. 3**

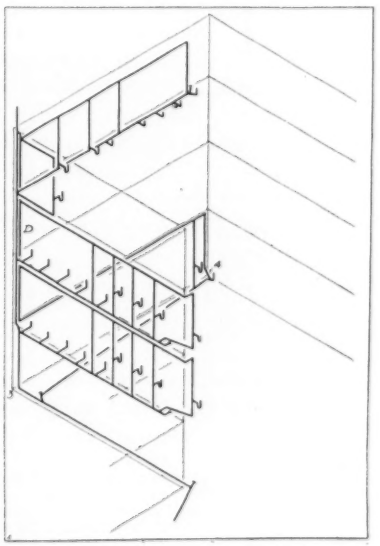


**Fig. 4**

# The "Standard" Electric Is Your Biggest Bid

THE "Standard" Electric Dishwasher and Sink offers advantages never before available. The famous "Three 8's" dimensions immediately identify the superiority of the sink. The 8-inch low back which fits under the low windows; the 8-inch deep compartment that prevents over-rim splashing; the 8-inch apron and its effect of massive beauty—these dimensions completely meet the need of the modern housewife.

Add to these features of ease and comfort the permanent cleanliness of Acid-Resisting Enamel with its hard glass-like surface which resists the staining effect of fruit and vegetable acids, and which is quickly made clean with a damp cloth. Add, too, the beauty and utility of the Chromard Finish swinging spout faucet with its platinum-like lustre—the harder-than-nickel metal which is non-corroding and non-tarnishing. And don't forget the vitreous china garbage container conveniently suspended beneath the sink on a folding bracket, with its handy lift-out aluminum receptacle.

Only by reviewing these points of superiority in this manner do you realize to the fullest extent how impressive and inclusive is this piece of kitchen equipment, to which the dishwasher-unit (described on the opposite page) adds the final note of completeness. And the sales and profit possibilities are immediately apparent.

"Standard" PLUMBING FIXTURES

# Dishwasher and Sink For Better Business-

The "Standard" Electric Dishwasher, which forms a built-in part of the combined dishwasher-sink, has many novel and exclusive patented features. The dishwashing compartment, for instance, which is ***entirely free of mechanism*** and easily cleaned, when the light basket has been lifted out. The revolving basket—presenting the surface of every dish directly to the action of the water. And the flexible shaft from the motor with its two labor-saving attachments—a revolving brush and a whipper. An ***exclusive*** advantage.

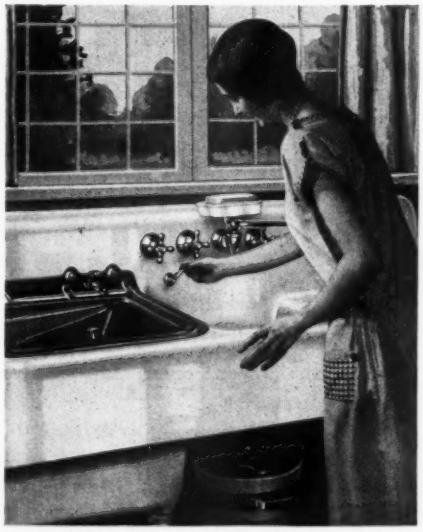
But these are only ***examples*** of superiority, as it is evidenced throughout the "Standard" Electric Dishwasher. Designed to overcome the difficulties encountered in earlier devices, the "Standard" Electric Dishwasher and Sink offers many unusual but thoroughly practical innovations. Its washing principle is entirely unique—most simple—and remarkably efficient. No rubber hose is needed—individual hot water supply valve fills washing compartment and provides ***clean*** hot water for rinsing. The standing drain automatically controls the depth of water in washing compartment.

The soapy water circulates through the centrifugal pump and is sprayed upon the dishes in the revolving basket so forcefully that every dish is washed spotless in five minutes. After washing, the motor is stopped and the soapy water drained off. Then the motor is again started ***and the dishes are rinsed under the clean hot water sprayed directly on them.***

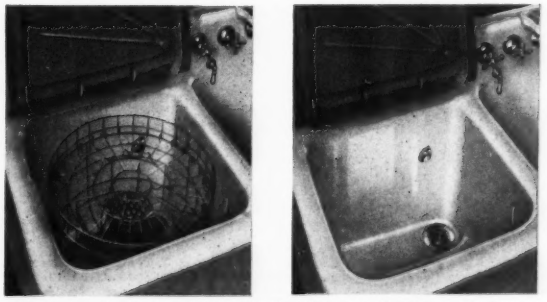
The basket revolves so slowly and easily that only a slight pressure is required to stop it. Therefore, the operation of this dishwasher is absolutely safe. The motor is controlled by a thermostatic switch which breaks the circuit and stops the motor when the slightest resistance occurs. It gives complete protection to the motor, and to the dishes as well.

This safety of operation is well supplemented by the noticeable simplicity of design. Every effort has been made to eliminate complicated assemblies that invite trouble and cause upkeep expense. In this regard the "Standard" dishwasher is a revelation, altogether the most efficient unit ever developed. And its inbuilt qualities can be depended upon to acquire the good will of its owners and their endorsement ***—the greatest lead to new business that ever existed.***

**Standard Sanitary Mfg. Co.**
PITTSBURGH



The dishwashing compartment is emptied quickly of waste water, and dishes are rinsed from a separate nozzle in the tray. Therefore no rubber hose is necessary for rinsing the dishes.



When the basket which holds the dishes and silverware is removed there is nothing in the compartment but the spray nozzles. There is no complicated machinery to lift out and replace when the compartment is cleaned—nothing under which the food particles and grease from the dishes can accumulate.

**"Standard" PLUMBING FIXTURES**

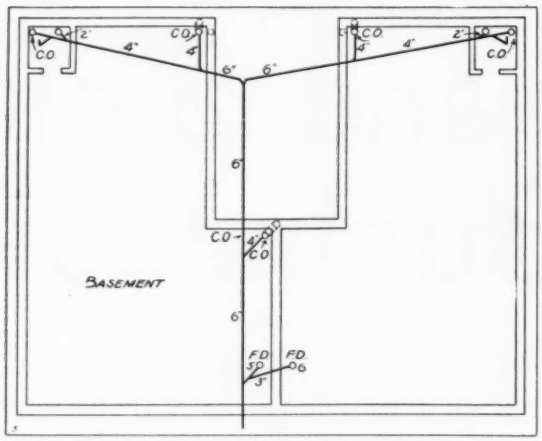



Fig. 5

all measurements in an isometric drawing should be made to scale, and then the drawing can be depended upon, for it will tell the truth.

In Fig. 2, stack A is used for nothing but to vent the two basement fixtures, and it would doubtless be much cheaper to run it across and connect into the vent line for stack B. In the first and second floor toilet rooms the water closets have circuit vents and the urinals continuous vents. This is true also of the third floor toilet room on stack D. Why not give the urinals circuit venting also?

In Fig. 3 the bathtubs are close enough to the stack to be stack-vented.

**From Oak Park, Ill.**

Figs. 5 and 6.—A letter accompanying this drawing states that the maker has been a plumber for 9 years, is taking a technical college course in plumbing and heating, and in connection therewith finds "Domestic Engineering" of the greatest help, all of which is pleasing to know.

These two drawings also cover the Dec. 17th problem, but instead of dividing the work into different elevations, the entire plumbing system is shown in one isometric elevation.

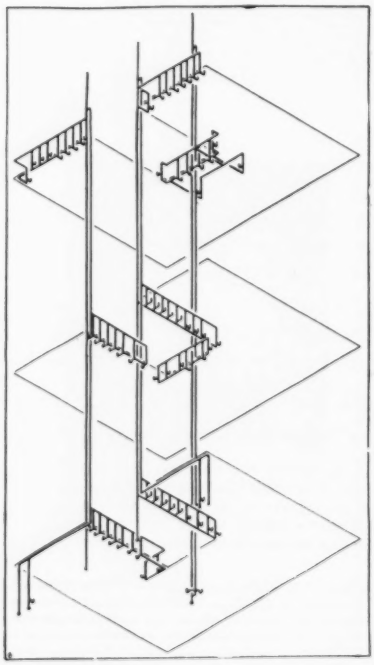


Fig. 6

The drawing is unusually clear and distinct, and one reason for this is that only the bare outline of the floors is shown, without vertical lines connecting the floors, and furthermore, the floors are spaced far enough apart so that any confusion between the work of different floors is overcome. This prompts us to state that sometimes it would be of benefit to show the floors further apart than according to scale, in which case, however, it would be a good plan to show on the elevation the ceiling heights, so that an estimator or workman might not possibly be misled.

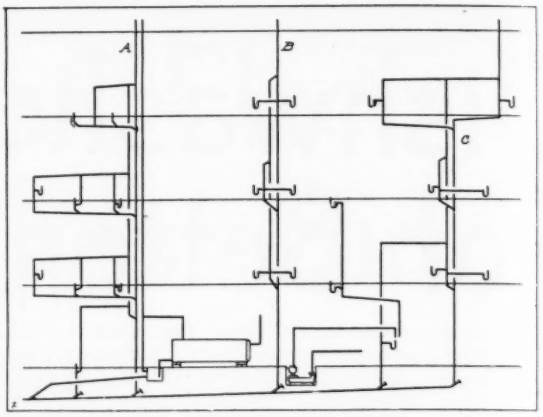



Fig. 7

Fig. 7.—This drawing is a corrected elevation of the incorrect problem of Dec. 3, 1927, and for the most part shows an excellent layout.

If stack A had been shifted so that it came between the two top floor water closets, we think it would have simplified this part of the work. It would have done away with the vent on the top floor, and would have brought the stack closer to the water closets all the way down.

By properly connecting the condensing tank, the trap to which it discharges can be done away with. This subject is quite fully taken up earlier in this article.

**(Continued on Page 54)**

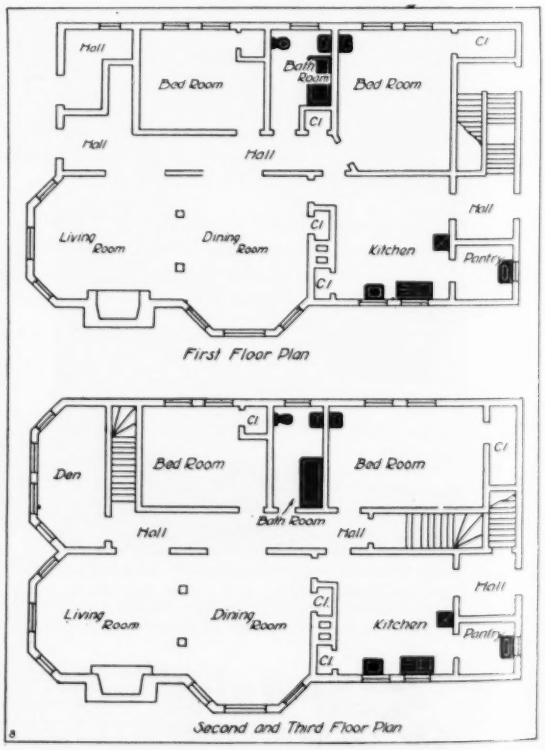



Fig. 8

*The Choice of Leading Unit Heater Manufacturers*

# IDEAL ARCOBLAST UNIT HEATERS

**FOR UNIT WORK ONLY**

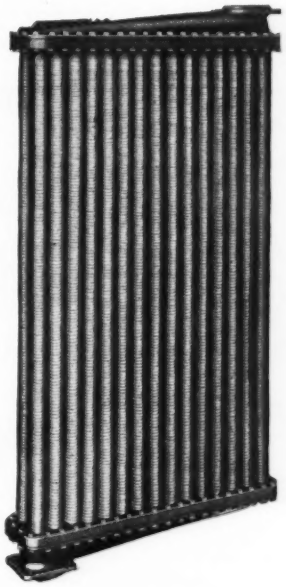
IDEAL Industrial Arcoblast Heaters represent the highest standard of quality in the field of Unit Heater Work. Their rugged Unit Design, minimum weight, ample steam carrying capacity, and other outstanding features, account for their wide and successful use by the leading Industrial Unit Heater Manufacturers.

In every application to which this superior heating surface is put, it is meeting the most exacting demands in a way that is winning the enthusiastic endorsement of Heating Engineers and Unit Heater Manufacturers.

These five features recommend Arcoblast for all Unit Heater work:

1. *Rugged Unit Design*
2. *No Soldered Steam-backed Joints*
3. *Non-Corrosive*
4. *Ample Tube Steam Carrying Capacity*
5. *Minimum Weight without impairing Strength.*

When Unit Heaters are specified it will pay you to secure estimates from leading Unit Heater Manufacturers now equipping their units with Arcoblast Heaters.



*Arcoblast Surface for Industrial Unit Heaters*

8 Arcoblast Unit Heaters have been installed in the plant of the Budd Manufacturing Company, Detroit. These Heaters are used in their paint-drying ovens and are installed in conjunction with Johnson Fan and Blower Company's equipment.

## AMERICAN RADIATOR COMPANY

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*Makers of IDEAL Boilers, AMERICAN Radiators, ARCO Tank Heaters, VENTO Ventilating Heaters, AIRID Air Valves, MERCOID Controls and devices for drying, humidifying, cooling and refrigeration.*

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# There's an extra PROFIT in the Make-Up!

**No. 30 Line**
**Steam Radiator Valve**
Nickel plated. Black composition handwheel, mushroom type. Can be furnished with lock and shield

## "WHAT! Solid Gold in a Union Seat?"

*Contractor:* "What's the idea? There's no nickel plate on the union seat of these radiator valve tail pieces."

*Jobber's Salesman:* "Sure, they're made that way. Notice that bright shining brass finish; just pretend it's solid gold, because that's what it means to you."

*Contractor:* "Yeah! I'm simple, go ahead."

*Jobber's Salesman:* "No, I'm not kidding you. First, the tailpiece is completely finished at the factory, including the the nickel plating and then, just to make sure that the surface will make a perfect contact for a steam tight joint, they give it an extra finishing operation."

*Contractor:* "Well that's alright, but how about this imaginary gold, that you've been handing out?"

*Jobber's Salesman:* "It's there, all ready for you to take, because due to that extra finishing, Ohio Brass unions make a steam tight joint, with less effort and less time. The time you save is a profit you make and that's pure gold, isn't it?"

**Ohio Brass Company**
**Mansfield, Ohio**
827V

**Ohio Brass Co.**

NEW YORK CHICAGO PHILADELPHIA PITTSBURGH ATLANTA CLEVELAND ST. LOUIS SAN FRANCISCO LOS ANGELES

PORCELAIN INSULATORS
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VALVES

# Treating a Plumbing System *with* Respect

A RECENT letter from a master plumber asks "What can I tell a local civic club about plumbing that would be interesting to them? Representatives of various trades and business have been speaking at these meetings and have been telling about their problems, aims and what the public should know about their work. I am next in line."

Probably the majority of those in the club are home owners. Every home owner is naturally interested in keeping his plumbing in working order. The following on how to take care of a plumbing system is suggested as suitable material for a short address. Similar suggestions have appeared in previous issues of "Domestic Engineering."

The manager of the business building department of "Domestic Engineering" suggests that the latter part of this article might be printed and pasted up in the basement when a plumbing system is installed or when repairs are made. The plumber's name would of course appear at the bottom.

**Treat Plumbing with Respect**

The plumbing systems of today are without doubt a better and more substantial installation than that of former years. Here at least is one case where our oldest inhabitant cannot tell how much better things were when he was a boy than they are now. This is the age of mechanics and mechanical achievements with plumbing have received great benefits from the progress that has been made in metallurgy and in pottery.

In addition to this the public has been educated gradually on how to use and how not to abuse their sanitary conveniences. Much of this is the result of valuable advice given to the householder by the master plumber when called in to clear up stoppages or to do repair

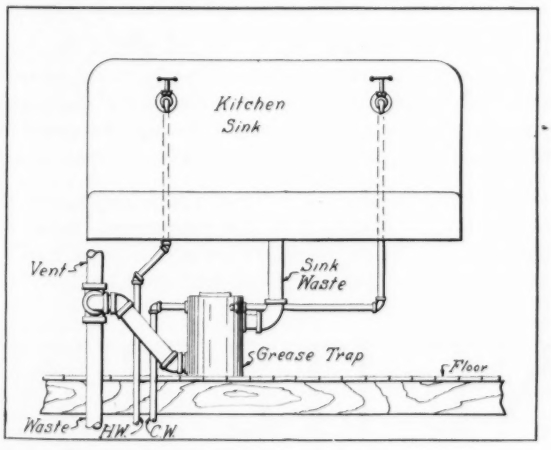



**Fig. 1.—The grease trap on the kitchen sink**

work which could have been avoided by a little consideration on the part of the occupant.

Most of the readers of "Domestic Engineering" are familiar with the old story that, when bathtubs were first required by law to be installed in the New York tenements, many of the foreign population filled them up with earth and made flower beds in them while others who did not have the earth handy found the bathtub a handy place in which to store coal.

Those days—to a large extent—have gone, never to return. And yet there are many things that the average

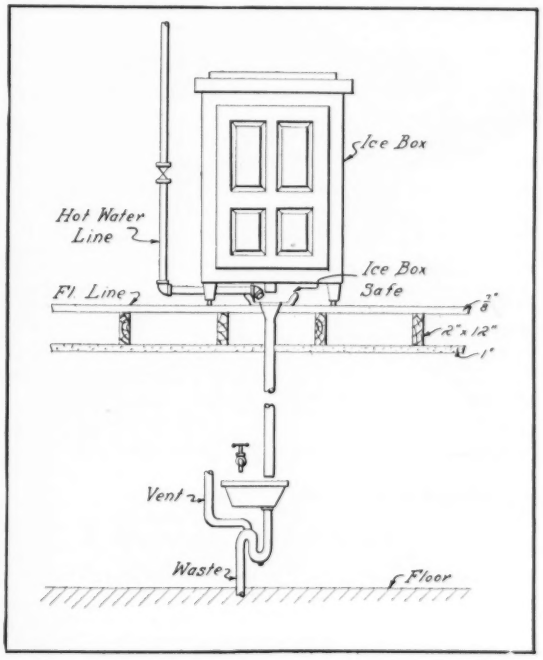



**Fig. 2.—The ice box drain and flushing connection**

person does not understand about modern plumbing. Many a housewife considers the kitchen sink a natural dumping ground for grease, coffee grounds, tea leaves, the dirt from the mop and garbage that can be forced down the drain. In a recent instance a home owner tried to get rid of some rotting potatoes by putting them down the closet bowl. There are many still who do not understand that these abuses are highly objectionable.

A good housekeeper often can be distinguished from a poor one by the condition of the plumbing fixtures in the house. It is surprising how much time some of them will spend trying to get matches, small particles of raw potatoes, and other foreign matter through the sink strainer. The state of mind seems to be that anything is legitimate if it can be inveigled through the strainer even by turning it lengthwise.

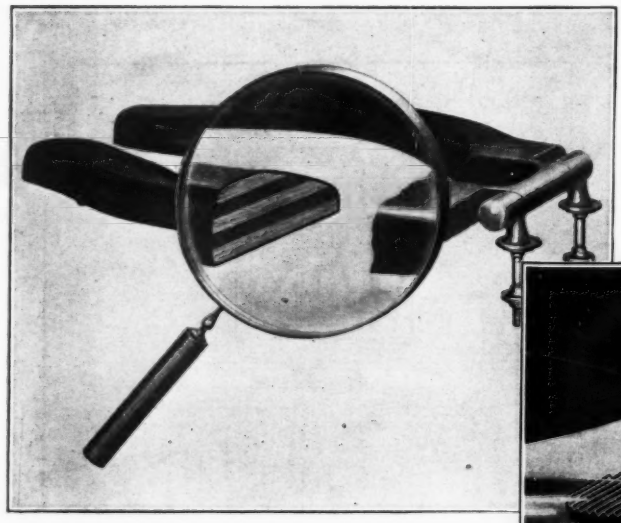
While there is no doubt that the modern plumbing fixture will carry off an enormous amount of foreign material which it was never intended to handle, such treatment is bound to result in trouble sooner or later.

Ten or a hundred matches may shoot around the trap but in time one is bound to hit a crevice in a pipe joint just right and lodge there. Then hair, lint, and other particles are caught and in a short time a stoppage results.

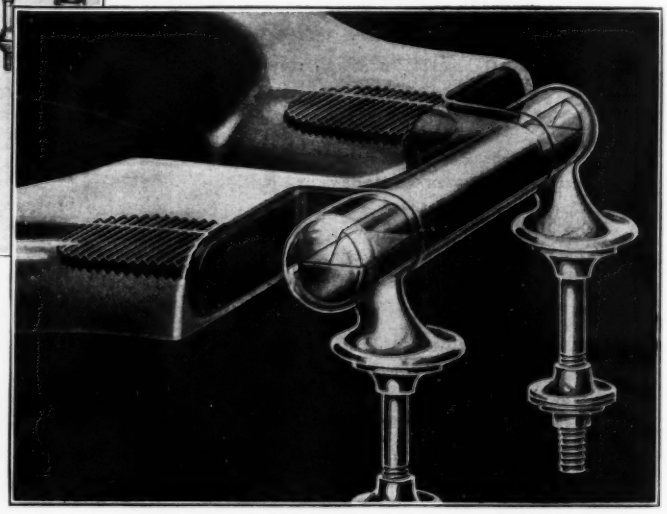
Grease is another very prolific source of trouble; often

# Your Customer Pays No More

## *to get these important features*



(1) **The new Whale-bone-ite Hinge.** Makes both seat and hinge one unbreakable, solidified unit, impervious to moisture, absolutely non-corrosive. No other closet seat offers you this hinge.



(2) **Whale-bone-ite's inner construction.** Laminated, alternating grain, hardwood core makes the Whale-bone-ite Seat proof against splitting, warping or cracking. Every Whale-bone-ite Seat is guaranteed for the life of the building.

A WHALE-BONE-ITE Seat costs no more than the cheapest composition closet seat. This is a fact every prospective buyer should know.

Why not sell him the best? Give him the better construction, the exclusive improvements, that have made the Whale-bone-ite Seat known everywhere as the world's finest closet seat.

The Whale-bone-ite Seat is one piece . . . molded when soft into shape around a core of alternating-grain layers of hardwood. It has no cracks or joints to harbor germs. No thin veneered surface to wear through. Easy to clean, non-inflammable, its beautiful surface will last a lifetime.

The new Whale-bone-ite hinge on this famous closet seat is molded in one operation as an integral part of the seat. Reinforced by a metal, die-cast, one-piece insert, it is covered with highly-polished Whale-bone-ite having the same strength and finish as the surface of the seat. Any model of Whale-bone-ite Seat may be obtained with this new hinge.

This new Whale-bone-ite feature will prove a sales clincher if you will show it to your prospect and explain its construction. Get one of these seats today—through your jobber. Or write us direct, giving your jobber's name.

# WHALE-BONE-ITE TOILET SEAT

## THE BRUNSWICK-BALKE-COLLENDER COMPANY · CHICAGO

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Albany | Boston | Chicago | Dallas | Detroit | Kansas City | Minneapolis | Philadelphia | San Francisco | Tampa | Ottawa |
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**For free cross-section of a Whale-bone-ite Seat, address Dept. 269, Seat Division, The Brunswick-Balke-Collender Co., 623 South Wabash Avenue, Chicago**

it is poured down the waste pipe at a high enough temperature to be in a liquid state but cools and solidifies before it passes out of the system. Coffee grounds and tea leaves are dangerous to the well-being of the waste pipe. Small solid pieces of soap are likely to stick to the inside of the pipe.

Modern plumbing has endeavored to overcome ordinary abuses in two ways; first, by prevention and, second, by cure. The difficulty with grease has been overcome by the use of grease traps, and efforts have been made to provide sufficient cleanouts so that all interiors of both waste and soil piping can be "rodded" out if trouble does develop.

The modern grease trap when installed is usually placed somewhat as shown in Fig. 1 with the cold water supply to the sink carried through the trap so as to chill the walls and contents causing all liquid grease to solidify in the trap. The hardened grease may then be removed from the trap periodically and before it enters the piping system.

It is unfortunate that the use of grease traps has been confined in most instances, to hotel and restaurant kitchens and to the kitchens of high class residences. The ordinary house still connects the kitchen sink direct to the waste pipe on the supposition that the housekeeper will use common sense in her use of the sink.

Ice boxes are another source of trouble and it is fortunate that the ice box drain is usually required by the local codes to be discharged into a separate sink before entering the piping system as indicated in Fig. 2.

Some codes require ice box drains to have a hot water flushing connection for the purpose of keeping the drain and pipe clear. Of course, if the flushing connection is not employed until the ice box drain is entirely stopped up and overflows onto the floor, it is of very little use.

### Advice That Will Be Appreciated by the Plumber's Patrons

For those who desire to avoid plumber's bills the following simple rules will do much toward making a plumbing system function as it should:

(a) Avoid throwing hair, lint, matches, coffee grounds, tea leaves, bread crusts, plate scrapings, potato and apple peelings, orange and lemon seeds or in fact anything of a foreign nature into the sink.

(b) Never allow matches to enter the drainage system even through the water closet.

(c) Try to keep lint and hair out of the bathtub and lavatory.

(d) Never throw hot, greasy water in the kitchen sink; instead let the water cool, remove the grease from the top, and then wash the utensil with hot soda and water and thoroughly wash out the sink with plenty of clean hot water afterwards.

(e) Clean the inside of the water closet bowl at least once a week with a small short-handled mop made especially for this purpose and flush out afterwards with about two gallons of hot water in which some chloride of lime has been dissolved.

(f) In washing sandy vegetables use plenty of water and a large pan and allow the dirt and grit to settle in the bottom of the pan before pouring off the top of the water into the sink.

(g) Clean the bathtub and lavatory with a cloth dampened with kerosene. This is better than using any of the grit polishes and may be wiped off with a dry cloth afterwards.

In other words treat your plumbing with respect and it will show that it is respectable plumbing. Abuse it and you may expect expense and inconvenience.

## Should Oil for Heating Be Kept on Hand in Summer?

MANY new users of oil heaters are wondering which is better, to keep their oil tanks filled in the summer time or to let them stand empty. Like most problems, there are advantages and disadvantages to both methods.

When an oil tank is allowed to stand empty all during the summer months, there is always the possibility that foreign matter, as well as water and condensation will find their way into the tank. There is not much danger of corrosion as the oil forms a protective coating over the metal which will act as a preservative for a long time.

Moreover, with an empty tank, all the other parts of the oil heating apparatus may be standing ready to function, but no heat can be had in event of an unexpected cold snap or a period of cold rainy weather. One of the chief advantages of oil heating lies in its ability to meet unexpected demands regardless of when they may occur, and an empty oil tank on such occasions is about as popular as a dry gasoline tank in an automobile five miles from a gas station.

When the oil tank is filled up in the spring and left to stand all summer with only a few light demands upon it for unseasonable days, there is the possibility that the oil will have a tendency to settle out. Added to this is the fact that the user will have an investment in oil tied up for six months before he really has need of it.

Yet the matter of the investment should not stand in the way to any serious degree, because the house owner has become pretty well accustomed to buying during the summer all his coal for the following winter, and he usually pays the bill, too, before he actually burns a single shovelful.

When the tank can be filled with a good grade of oil and the investment can be negotiated, it is undoubtedly desirable to keep the tank filled during the summer period. When the cost consideration is important or where a poor grade of oil is being used, it is better to let the tank stand dry until early fall, at which time it may be filled and made ready for the first cold weather.

### HEATING AND VENTILATING ENGINEERING IN CO-OPERATION WITH INDUSTRY

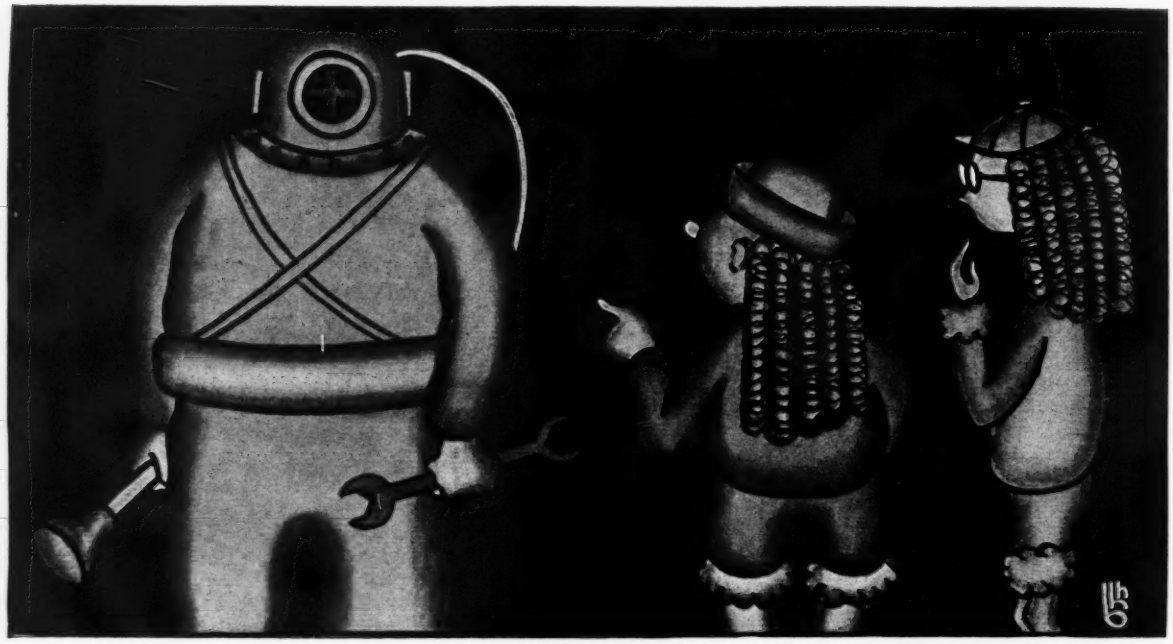
"Just what is the function of an engineering college? Is its purpose simply to train young men in the fundamentals of the engineering profession or can it claim partnership with industry and help in the solution of the many pressing problems of today?" asks Frank D. Gavin, assistant professor of mechanical engineering, Polytechnic Institute, Brooklyn, N. Y.

The Polytechnic Institute believes there should be closer co-operation between engineering and industry. It is offering courses in heating and ventilating. The engineering industries are helping this work by gifts of equipment for laboratories and machine models and parts for lecture and classroom work. In this way, quite a lot of the educationl work now being done by the various industries at considerable expense can be handled by the engineering colleges to the mutual benefit of both the industries and the colleges.

### Herman J. Schnell

Herman J. Schnell, master plumber of Memphis, Tenn., died recently at his home, 2026 Waverly Place. He had been ill four months. Mr. Schnell was a member of the firm of Schnell & Elmore, until about a year ago, when he continued operating a plumbing shop at 593 Linden avenue.

# The Plumbing Primer



"Oo! What is the man wear-ing?"

"The man is wear-ing a div-ing suit."

"Is the man a chan-nel swim-mer?"

"No, the man is a plumb-er."

"Why does he wear the div-ing suit?"

"Be-cause Miss-us Yen-sen's toi-let is act-ing up a-gain."

"Must he have a div-ing suit to fix the toi-let?"

"You said a mouth-ful, Al-ger-non."

"What will the plumb-er do aft-er he fix-es the toi-let?"

"He will sell the lad-y a fine, new toi-let called the Improv-ed Mad-era."

"Will the lad-y be pleas-ed?"

"Yes be-cause there will be no more tid-al waves from the toi-let."

"Will the plumb-er be pleas-ed al-so?"

"Yes, be-cause he will make a dan-dy pro-fit."

MADDOCK'S *Improved*
MADERA
THOMAS MADDOCK'S SONS CO. ▪ ▪ TRENTON, N. J.

# RETAIL ADVERTISING SERVICE

**$4.20 for twelve weeks' service. We send new cut each week. You take copy from this page.**

*Modern merchandising requires the use of the newspaper to help out the other forms of selling—if the cost of the newspaper space is not too prohibitive. In order to help keep down the cost of preparation, and to conserve time for busy retailers, this service is offered at $4.20 for twelve weeks. We send a new cut and a reprint of this page each week. All you have to do is hand them to your local newspaper and your work in connection with newspaper advertising is done.*

**Series No. 25**

## Leisure — *do you have it?*

MANY housewives find it impossible to secure a little leisure time for themselves—leisure for reading, for correspondence, for visiting. Often the reason is the lack of modern home appliances. We offer the type of plumbing and heating equipment which needs a minimum of attention—automatic water heaters, a conveniently equipped kitchen sink of the right height, laundry trays—and other items which will speed up the work of the house. We invite you to visit our complete displays.

(In this space your Name, Telephone Number and Address)

**IF YOU are a newspaper advertiser, your paper will give you space in its news columns. Clip out the item below.**

---

## HASTE IS BEAUTY'S ENEMY

"A person who hurries," says Harry Brown, local plumbing and heating contractor, "is a person who worries—and worry is a deadly enemy where beauty is concerned.

"Perhaps the greatest achievement of science is that it has given to the woman of today a chance to secure leisure time in which to cultivate her charm. A great deal of attention has been turned in the last twenty years toward perfecting household appliances—so that our grandmothers find the lot of the housewife much less arduous than in their day.

"The housewife who hurries is, very likely, using old-fashioned equipment. Her opportunity for leisure and calmer living will come with the installation of modern, efficient household appliances."

## Leisure — *and modern appliances*

PERHAPS the greatest achievement of modern science is the leisure it gives through simplifying work. We have many appliances on display which help to make the work of the house lighter, and to secure for the housewife a little leisure in each day to give to those things which are so often neglected—a chance to read, to take up an outdoor sport, etc. Come in and visit our complete displays of home appliances.

(In this space your Name, Telephone and Address)

**GET this letter off to a list of homeowners whose homes need to be modernized. It can be done in your stenographer's spare time.**

HARRY BROWN
PLUMBING & HEATING

Two Rivers, N. Y.,
Aug. 4, 1928.

Mrs. Edward Jones,
Two Rivers, N. Y.

Dear Madam:

I sometimes think that the main difference between the women of today and the women of our grandmothers' day is in this: Modern science has given the woman of today more leisure than her grandmother had.

But there are many homes which have not had the wonderful possibilities of modern appliances brought to their attention. Take the matter of hot water. It doesn't seem to matter much just how water is heated—but if you consider the number of times during the day that you need hot water, and the quantities you need, you will appreciate the fact that a water heater which will deliver all the hot water you want at a mere turn of the faucet, would be a great convenience.

So with many other appliances we have on display. We invite you cordially to see our displays.

On practical grounds, there is the consideration that the modern home always brings a better rental or sale price than the one without up-to-date equipment.

Very truly yours,
HARRY BROWN.

# QUESTIONS

## ASKED BY READERS AND ANSWERED BY EXPERTS

### WANTS GAS WATER HEATER TO SUPPLY BOTH HEAT AND HOT WATER TO BARBER SHOP

Editor, "Domestic Engineering":—My barber wants me to change his hot water supply system in such a way that it can also supply heat by radiator to his shop. I told him it could be done under certain conditions.

He now has a five-gallon boiler attached to a gas water heater located in the rear of the shop. The dimensions of this shop are: 18 ft. long, 11 ft. wide, and 12 ft. high.

His five-gallon boiler supplies hot water to a pedestal lavatory.

I would like to know the best and most economical way of supplying heat by radiator from the hot water boiler.

New Jersey. P. J.

---

We do not advise the use of one heating appliance and one storage tank for both heating and domestic use.

Room heat should be steady and uniform, and this condition cannot be maintained if water is drawn from the system for use at the lavatory.

However, if your barber wants to take a chance, he can do so. You can install a 30-gallon hot water tank, with a gas burning heater to provide the heat, with piping from the tank to the lavatory in the usual manner and with a supply line from the tank to a radiator and with a return line from the radiator back to the return pipe between the tank and the heater. See Fig. 1.

This places the radiator under pressure, and if the pressure is excessive, it will be necessary to install a reducing pressure valve and a relief valve, although many radiators have been installed under direct city pressure, which sometimes exceeds 60 or even 70 pounds.

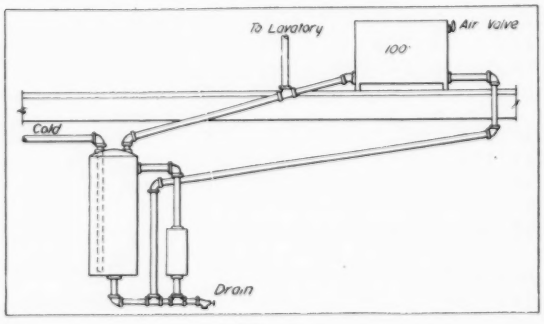



Fig. 1

A better method is to install a separate system of heating. The initial cost will be a little higher, but the results will justify the additional expense.

A small heating system, using gas for fuel, has been used in a number of small eating houses and there is no reason why similar plants could not be installed in other small buildings, offices, shops, filling stations, etc.

In connection with the installation it is necessary to take into consideration the theory of its operation, which is explained as follows:

This heating system consists of three principal units, the radiator, heater, and expansion tank. The entire system is filled with water to a point about midway of the gauge on the expansion tank.

The theory of operation is based on direct circulation, caused by gravity, starting at the heater, where the heat applied to the coils, raises the temperature of the water in the coils, and the water rises into the expansion tank and from there to the radiator, returning from the radiator to the heater.

The expansion tank must be placed above the gas heater and the radiator, and the system should be connected to the city water supply or it may be filled by pump or pail. A drain valve is placed at the lowest point for the draining and the removal of rust and scale and sediment.

The overflow from the expansion tank must be provided with a vent so as to prevent the siphonage of the tank.

The system can be controlled with a thermostat if so desired. A thermometer serves a useful purpose, but is not absolutely necessary.

In most installations of this kind from 100 to 125 sq. ft. of direct cast iron radiation is used, without any valve at the radiator; with expansion tank close to ceiling and with 1¼-inch feed and return main from the tank to the radiator and back to the heater, using ¾-inch pipe from the heater to the tank and also in the return line close to the heater because the heater is tapped ¾ inch.

---

### HOW TO BEND BRASS PIPE FOR COIL

Editor "Domestic Engineering":—I would like to ask you to answer the following questions: What is a good way to bend a ¾-inch brass pipe for a coil in a hot water heater, the coil to be about 8 to 10 inches in diameter?

Nebraska. F. M.

---

A good way to bend brass pipe, iron pipe size, for such a coil, is first to heat the pipe cherry red and then let it cool slowly. Then bend it around a mandrel, or iron pipe, the proper diameter. When bent, take a hack saw and saw off the ends the right length. Then thread them carefully.

In threading the ends do not try to make the threads in one cut. Set back the dies a little, so as to make the first cut shallow.

Then set them up and run over the thread again. Finish the threads to standard size with the third cut, if possible.

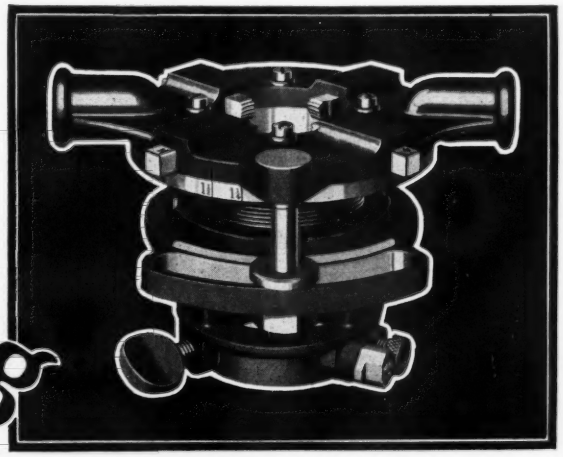
The idea in threading the ends in stages is to prevent twisting the pipe, which is quite soft after having been so fully annealed.

We think the above is a safe, conservative method. It may not be the quickest but it probably is one of the best.

---

M. J. Feeney, president of the Philadelphia Master Plumbers Association, is making an automobile trip through New York State in company with his wife and family.

# Down Go Your Threading Costs



The New No. 11

1 to 2 Inch

Also No. 11A 1" to 2" Ratchet

# WITH THIS NEW BEAVER

*Set the dies to size that's all—and a No. 11 or 11-A Beaver is ready. Does in the twinkling of an eye what takes minutes with other tools.*

*The No. 11 and 11-A Workholder is the most accurate ever put on a Die Stock—and it has many advantages over any previously used.*

If high costs and short profits are troubling you there's one sure way to solve the problem. Stop useless expense.

And if you are wasting time cutting threads on pipe, you are paying a higher price for your threads than the fellow who uses Beaver Self-Contained Die Stocks. For, the fellow who uses Beaver Self-Contained Die Stocks doesn't pay for time wasted hunting for or changing loose parts. He cuts a thread in the time it takes to get ready with loose part tools.

The New No. 11 Beaver 1 to 2 inch Plain Stock and No. 11A 1 to 2 inch Ratchet Stock, are better fitted to cut your pipe threading costs than any Die Stocks ever made.

The best way to prove this is to try one for 10 days at our expense—and at no cost to yourself whatsoever.

Use the coupon below if you wish to try a No. 11 or 11A.

**THE BORDEN COMPANY**

510 Dana Avenue :: Warren, Ohio

*New York Office: 50 Church St., New York City*

Gentlemen:

According to your agreement I should like to try a No. .....Beaver for 10 days. If I don't like it I shall return it and not pay one cent for the trial. If I do like it I shall keep it and honor my jobber's invoice for it.

Name .....

Street Address .....

City & State .....

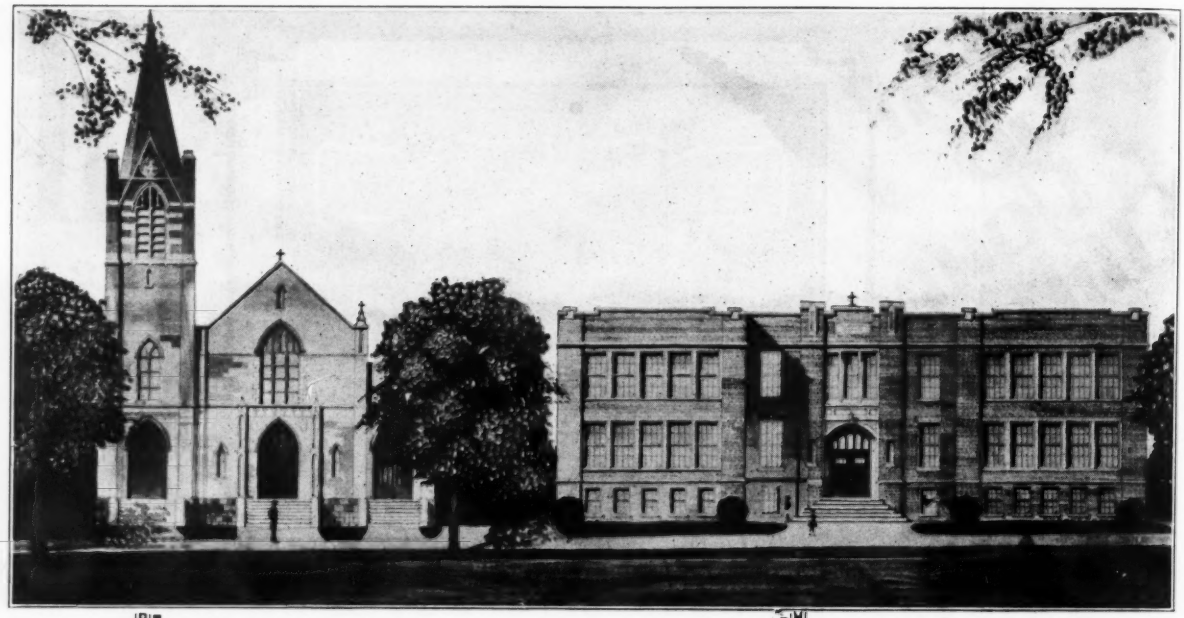
Name of Jobber .....

8-4-28

# BEAVER

## Money Making Pipe Tools

# ST. JOSEPH'S SCHOOL—SIMPLEX EQUIPPED



## SIMPLEX FLUSH VALVES

STAND THE ABUSE IN
PUBLIC BUILDING INSTALLATIONS

There is no finer Flush Valve for schools and all public buildings than Simplex.

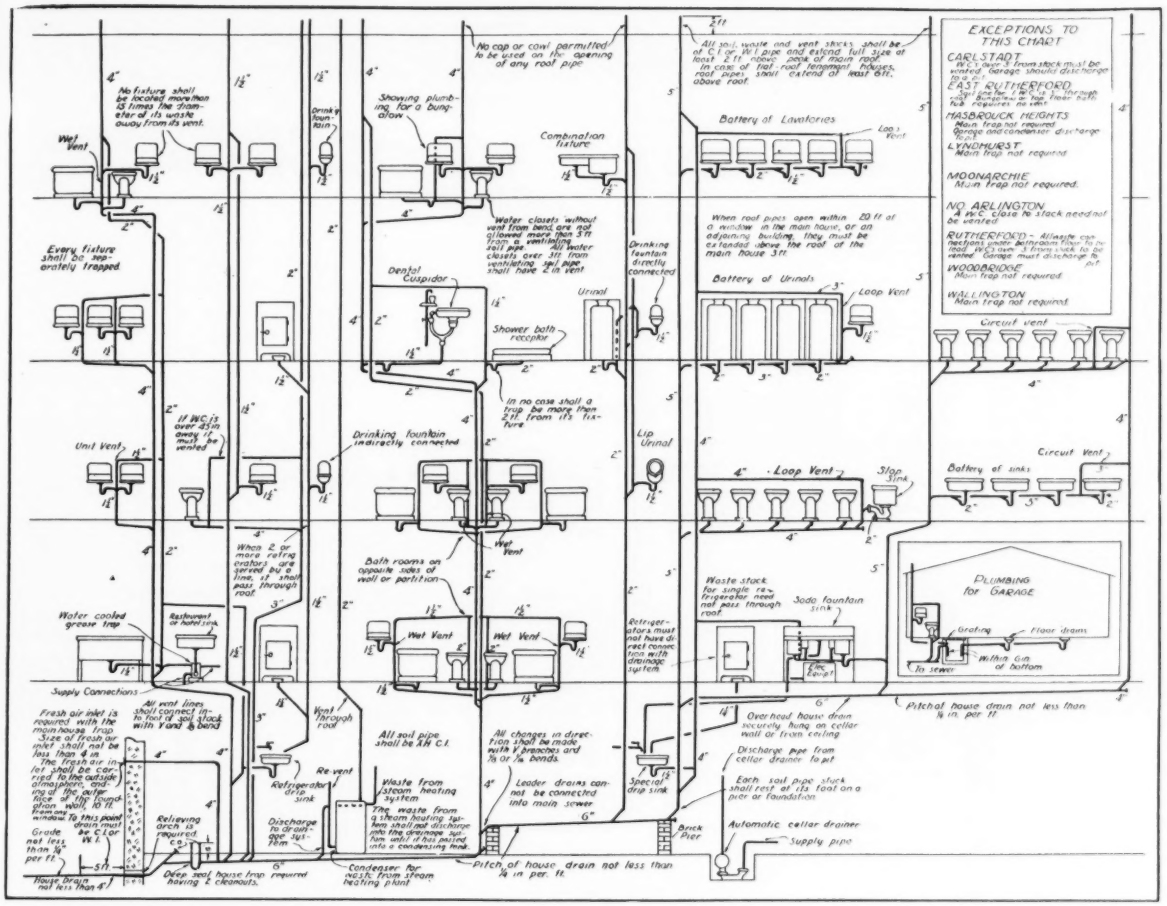
Due to the four way by-pass arrangement they can easily be adjusted to any pressure from the outside.

*Ask your dealer for complete details.*

**ST. JOSEPH'S SCHOOL**
**Shelton, Conn.**

*Architects—Keene & Palmer, Derby, Conn.*
*Plumbing Contractor — M. H. Scully, Ansonia, Conn.*
*Jobber — C. S. Mersick Company, New Haven, Conn.*

The
**BEATON & CADWELL MFG. CO.**
*Established 1894*
**NEW BRITAIN, CONN.**


EXCEPTIONS TO THIS CHART
CARLSTADT
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WALLINGTON
Battery of Lavatories
Battery of Urinals
Battery of sinks
Circuit vent
Loop Vent
Wet Vent
Unit Vent
Dental Cuspidor
Shower bath receptor
Drinking fountain indirectly connected
Drinking fountain directly connected
Combination fixture
Urinal
Lip Urinal
Slop Sink
Soda fountain sink
Water cooled grease trap
Restaurant or hotel sink
Refrigerator drip sink
Special drip sink
Supply Connections
Waste stock for single refrigerator need not pass through roof.
PLUMBING for GARAGE
Grating
Floor drains
Within 6in. of bottom
To sewer
Overhead house drain securely hung on cellar wall or from ceiling
Discharge pipe from cellar drainer to pit
Each soil pipe stack shall rest at its foot on a pier or foundation
Automatic cellar drainer
Supply pipe
Brick Pier
Pitch of house drain not less than ¼ in. per ft.
House Drain not less than 4"
Deep seal house trap required having 4 cleanouts.
Condenser for waste from steam heating plant
Relieving arch is required C.O.
Re vent
Vent through roof
Waste from steam heating system
Discharge to drainage system
Leader drains cannot be connected into main sewer
All soil pipe shall be XH C.I.
Bath rooms on opposite sides of wall or partition
No cap or cowl permitted to be used on the opening of any roof pipe
Showing plumbing for a bungalow
Every fixture shall be separately trapped
No fixture shall be located more than 13 times the diameter of its waste away from its vent.
Water closets without vent from bend are not allowed more than 3 ft from a ventilating soil pipe. All water closets over 3 ft from ventilating soil pipe shall have 2 in vent
In no case shall a trap be more than 2 ft from its fixture
If WC is over 45 in away it must be vented
When roof pipes open within 20 ft of a window in the main house, or an adjoining building, they must be extended above the roof of the main house 3 ft.
All soil, waste and vent stacks shall be of C.I. or W.I. pipe and extend full size at least 5 ft above peak of main roof. In case of flat roof permanent houses, roof pipes shall extend at least 6 ft. above roof.
Fresh air inlet is required with the main house trap. Size of fresh air inlet shall not be less than 4 in. The fresh air inlet shall be carried to the outside atmosphere, ending of the outer face of the foundation wall, 10 ft. from any window. To this point drain must be C.I. or W.I.
Grade not less than ¼" per ft.
All vent lines shall connect into foot of soil stack with Y and ⅛ bend
All changes in direction shall be made with Y branches and ⅛ or ¼ bends.
When 2 or more refrigerators are served by a line, it shall pass through roof.

**Pilot drawing for nine towns in New Jersey**

# Pilot Drawing *for an Entire County*

## *By* R. M. STARBUCK, JR.

IN PREVIOUS short articles on pilot drawings, we have seen them applied to single cities and towns, and to groups of towns varying from two or three to a half dozen.

Now we present this same up-to-date device, if we may so call it, applied to an entire county. Of course there are counties and counties, but in this instance the county covers nine different towns, Carlstadt, East Rutherford, Hasbrouck Heights, Lyndhurst, Moonarchie, No. Arlington, Rutherford, Woodbridge and Wallington, N. J.

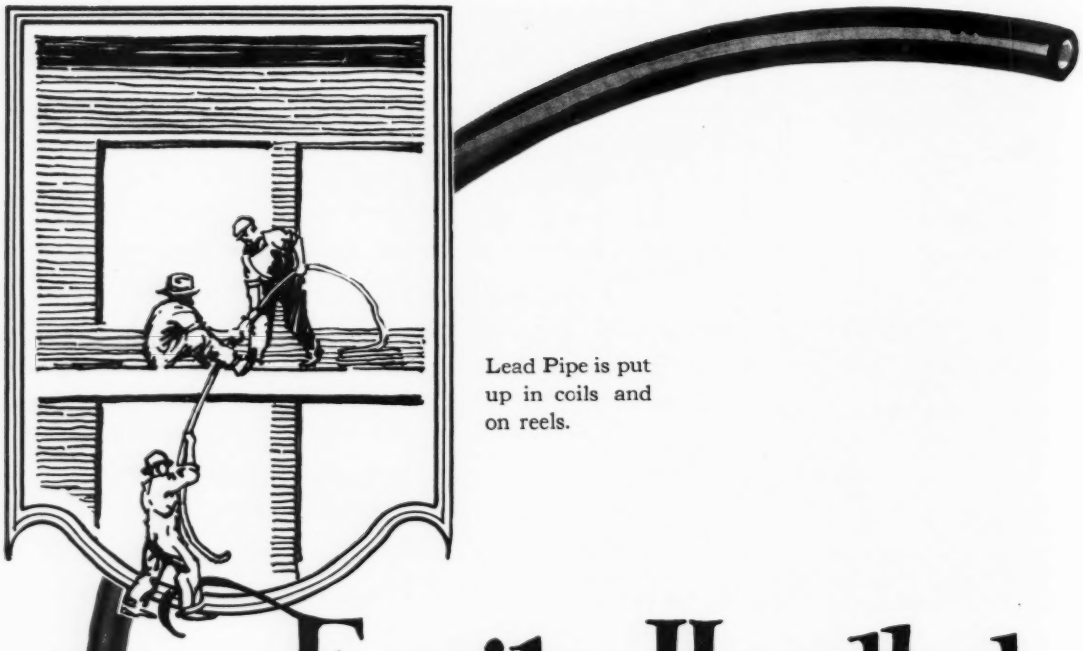
Naturally it is a more difficult undertaking to produce a pilot drawing covering nine towns than it is to make one for a single city or town. The several codes have to be studied and the several plumbing inspectors visited or corresponded with. In this particular instance the general practice of the nine towns was quite similar, and it was not so very difficult to create a plumbing elevation that would cover a large part of the practice of each town in an acceptable manner. The features that showed a radical difference were handled by notes explaining exceptions that were to be made in the case of each town. It will be noted, for instance, that some of the towns have the main trap and fresh air inlet, while others do not, a difference that is easily taken care of by notes.

### HOW THE PILOT DRAWING MAY SERVE SEVERAL TOWNS

WE DO NOT believe that at first thought it will be clear that the pilot drawing is capable of performing special work in such a group of towns as we are at present considering. There are many, many towns, large and small, scattered over every one of the states, which do not have a plumbing code. This may mean that plumbing practice in such a town runs wild or is at least much more lax than it should be. In some cases the absence of a definite set of plumbing laws or code may be due to the lack of a leader who will go ahead and organize and direct the work necessary to bring about such results. Perhaps the town has some sort of direction in its plumbing practice, but because of the expense, has never established its own code. The pilot drawing seems to be quite a satisfactory remedy for these conditions, and to our knowledge, has been the means of lining up a number of small communities and putting them on a proper basis plumbing-wise. This outcome is not only a benefit to the plumbing trade of such a town, but also to the surrounding towns.

We know of certain towns which have never had any sort of direction to their plumbing practice which have

# LEAD PIPE



Lead Pipe is put up in coils and on reels.

## Easily Handled~

Lead pipe is easy to handle. Coming in convenient coils as it does, the men on the job find it a simple task to string it wherever they want it without making numerous joints and cuts.

The contractor finds it economical to store and easier to haul. Time is saved and better work is done.

Besides these highly important features lead pipe is the only sure means to an everlasting installation.

## NATIONAL LEAD COMPANY

National Lead Co. (Principal Office) 111 Broadway, N. Y. C.
Georgia Lead Co. Atlanta, Ga.
National Lead Co. (Jas. Robertson Lead Works) Baltimore, Md.
Chadwick-Boston Lead Co. Boston, Mass.
National Lead Co. Buffalo, N. Y.
E. W. Blatchford Co. Chicago, Ill.
National Lead Co. (Raymond Lead Works) Chicago, Ill.
National Lead Co. Cincinnati, Ohio
National Lead Co. Gibson & Price Co. Cleveland, Ohio
Lawrence Shot & Lead Co. Omaha, Neb.
John T. Lewis & Bros. Co. (Tatham Bros. Works) Philadelphia, Pa.
National Lead & Oil Co. of Pa. Pittsburgh, Pa.
National Lead Co. St. Louis, Mo.
National Lead Co. (Northwestern Works) St. Paul, Minn.
Hoyt Metal Co., Ltd. of Canada Toronto, Canada

come in under a pilot drawing with much benefit. Not in all cases has this been a 100 per cent procedure, but it is good to know that such towns are doing this thing, from which benefit to some degree at least must surely result.

The pilot drawing has now been in use a sufficient length of time and in a sufficient number of different localities to have produced some knowledge concerning its benefits and advantages. Some of these, as they come to mind, are the following.

The pilot drawing eliminates individual opinions on matters of plumbing practice, and establishes one definite, authorized interpretation of each and every requirement.

It puts every plumbing contractor on an equal footing with the plumbing inspector. Expensive delays and mistakes by workmen are avoided by reference to the pilot drawing. This fact is especially true of workmen coming from out of town.

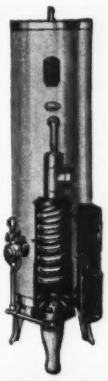
The pilot drawing is a large factor in stabilizing estimating, and it has been proved that it has a sales value in demonstrating to customers.

The use of such a drawing to educate young workmen, and as a help in preparing for examinations, are other advantages that it presents.

Another point that should not be overlooked is that in the group of nine towns concerned in the pilot drawing here shown there is not a single town that by itself alone could afford to have such a drawing made up, at least that would be a natural supposition, but by clubbing the towns together on a single drawing, the expense becomes nominal to each.

### BOILER HOUSE EFFICIENCY AND ECONOMY
### Discussed by British Engineers

An enormous amount of research, theorizing and experiment had been carried out during the last 50 years in connection with the furnace side of the steam boiler, almost uselessly, said T. Roland Wollaston, M.I.Mech.E., at the summer meeting of the Institution of Heating and Ventilating Engineers, at Blackpool, England, in that the compilers had nearly always started from unsound bases, to wit, the orthodox flat-grate thin-fire furnace and the assumption that "convection" played the most important part in transferring heat from fuel to water. In burning coal on such grates they were told that the utilization of 50 per cent excess air with, say, 12 per cent $CO_2$ in the resultant chimney gas constituted excellent practice. Then again it had been the custom to rate boilers on "heating surface" regardless of its location in relation to the fire. Nothing could be more absurd. One found constantly guarantees of from 5 lb. to 8 lb. evaporation per square foot of heating surface per hour from boilers, but it was perfectly obvious that the rate of evaporation from the surface nearest the fire must be many times that of the surface furthest away. Dealing with the relative value of "radiant heat" from the incandescent fuel as compared with "convected heat" the conclusion might be drawn that "radiant" heat is very much more useful than "convected" in water heating and steam raising. Mr. Wollaston looks forward to the boiler in which, by converting all the heat possible into radiant heat, evaporations of the order of 30 to 50 lb. per square foot of heating surface per hour would be obtained. This he suggested would be obtained by adopting gas producer practice in the design of a producer boiler. He further illustrated the evolution of the radiant heat-boiler with the object of attracting interest to induce some of the members to think with him on lines which he felt satisfied would greatly improve and cheapen steam raising plants in the future.

Hotstream Automatic Storage Heaters are offered to the Plumbing Trade as the highly perfected result of more than fifteen years experience in the manufacture of water heating appliances. Among their special features are:—

Side Arm Circulating Type
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Double Extra Heavy Tank
Hotstream Throttling Type Thermostat
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Beautiful finish.

*Write for full information.*

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"Makers of Heaters that Heat"
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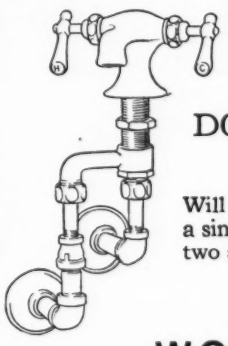
AUTOMATIC STORAGE
HEATERS



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FAUCET

Will supply tempered water through a single spout more conveniently than two single faucets.

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SUPERIOR PLUMBING FIXTURES
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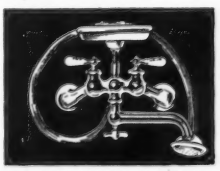
KEWANEE
RADIATORS

KEWANEE BOILER CORPORATION
Kewanee Illinois

Classic Sink Fixture



Father of all the other combination sink fixtures and far and away the biggest seller of the lot. You'll make no mistake to to keep on selling Classics, no matter how many substitutes come hammering at your door.

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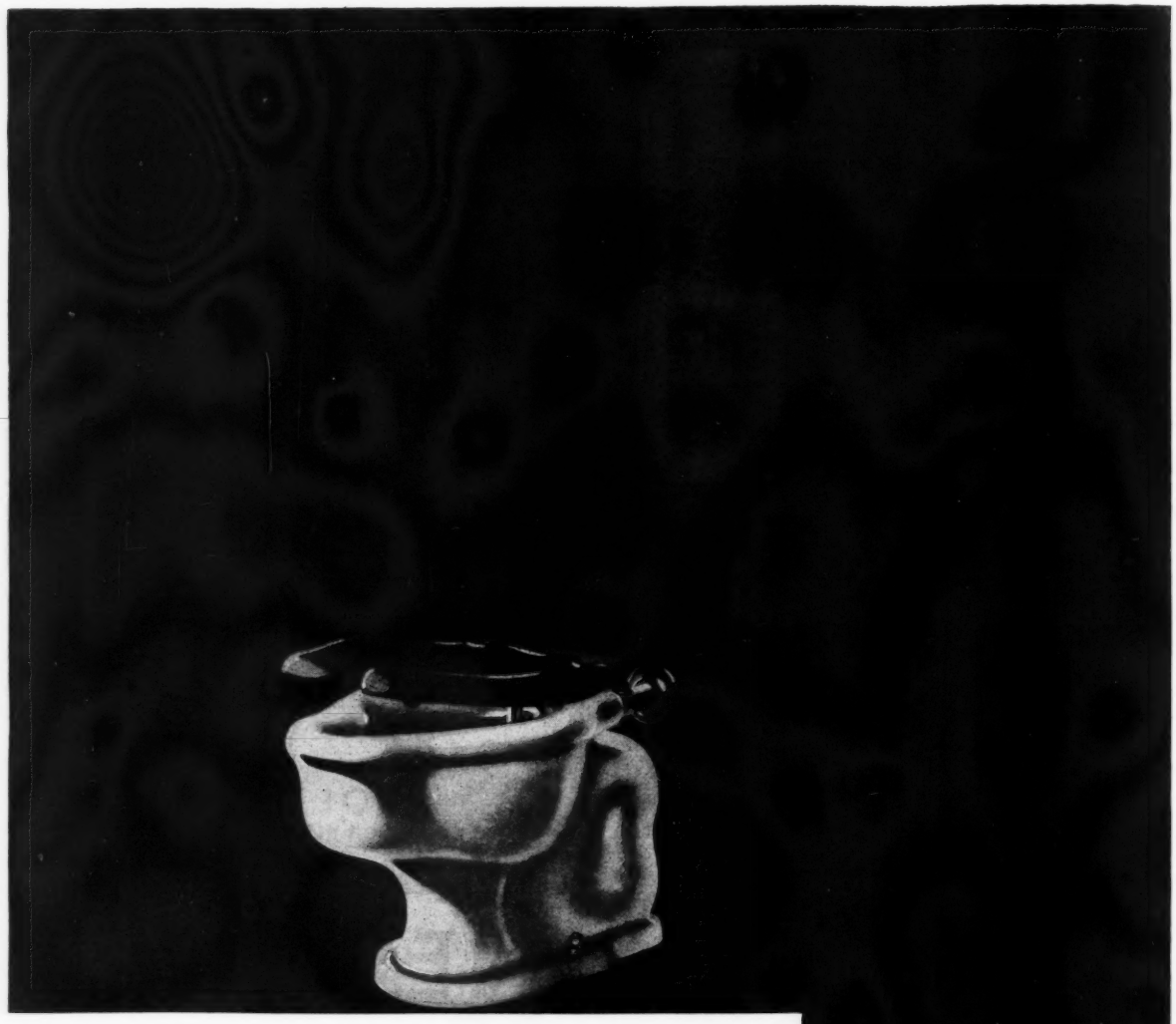

# Never, Never, *Never* . . . Will They Stand Unflushed

No one, *no one* can use a Clow Madden Automatic, and let it stand unflushed. Clow Madden Automatics flush themselves . . . more swiftly than human hands can operate . . . more surely than human minds can function.

With Clow Madden Automatics, sanitation does not wait on the hurried workman, the play-thoughtful child, the heedless transient closet user.

Swiftly, surely, all residue is whisked away in an engulfing torrent of water. Bad odors, flies, lice, germs, can't exist in Clow Madden Automatics.

A simple valve . . . a closed top tank . . . a bowl with no eddy or backwash hollows . . . these insure a perfect flush each time the seat is used. (Read record No. 102)

**Record No. 102**

1904 — 24 Clow Automatics installed. 1928 — repair bill after 24 years is $5.00, or less than 1c per closet per year. *Bingham School, Lansing, Michigan.*

*James B. Clow & Sons, 201-299 N. Talman Avenue, Chicago*

## CLOW MADDEN AUTOMATIC

*Forty-Eight Styles, Heights and Types to Meet Your Requirements*

# When Does a Boiler Make Steam?

*Several heating contractors were sitting around the association room in a Western city. They were talking about boiler pressures. The discussion brought out the question, "At what temperature will water in a boiler boil if, before starting the fire, air is pumped into the boiler until the gauge registers 10 lb.?"*

*A "Domestic Engineering" representative who happened to be present was appealed to and he made the following explanation:*

SUPPOSE that the boiler stop valve is closed and the boiler, as shown in Fig. 1, is pumped up with air until 10 lb. gauge pressure registers, at what temperature will the boiler make steam? In this case it is assumed that the air remains unheated so that its expansion does not change the pressure conditions in the boiler.

In the making of steam the process is primarily produced by the boiling of the water, and the temperature at which this process takes place is governed by the pressure existing on the surface of the water. It requires a higher temperature to make steam under high pressure than it does under low pressure, and it makes no difference if this pressure is exerted by steam on top of the water, air on the surface or by the head of the water itself.

It is a well known fact that in hot water heating systems the water will not boil at exactly 212 degrees F. be-

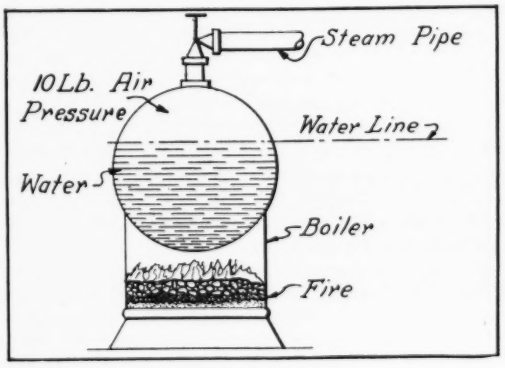


Fig. 1

cause of the head on the boiler caused by the water in the radiators above, and that the greater this head the higher the temperature to which the water may be raised without boiling. A generator produces additional head artificially by means of a column of mercury, while a "tank in the basement" system produces the same effect by filling up the system with water until the air in the tank is compressed to give the same result. When a boiler is fired up under ordinary atmospheric pressure, the boiling point is about 212 degrees F., while, if it is fired up under a partial vacuum such as is used in a fixed differential system, it will boil at a lower temperature than 212 degrees F., owing to the lesser pressure under which the boiling takes place. Any steam table will tell the exact temperature at which boiling will take place under pressures less than the atmosphere.

When pressures greater than the atmosphere exist, the temperature is correspondingly higher and the same steam tables will also give these temperatures. It is a law of steam that ordinary saturated steam has the same temperature as the water from which it is produced and that, if the pressure on this steam is later reduced in the piping or radiators, the temperature of the steam will fall ac-

FLAGG FITTINGS
Made from fine materials—finished by skilled mechanics—distributed everywhere to fill the demand—you can't go wrong on Flagg Malleable Fittings.
Stanley G. Flagg & Company, Inc.
1421 Chestnut Street Philadelphia, Penna.
OVER SEVENTY YEARS

CAPI
Capitol radiator valves and elbows are now equipped with—
UNION NUTS
of
FORGED BRASS
—they have double the tensile strength of the ordinary cast brass nut.
CAPITOL BRASS
DIVISION OF MICHIGAN SMELTING AND
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RICHMOND PRODUCTS....
RICHMOND ADJUSTABLE STAND
"The Husky Baby" stand is incomparable. It is sturdy, strong and adjustable and will support two or three times the weight of any range boiler. Knocks down for storing or shipping.
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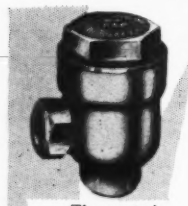
A DEPENDABLE SOURCE OF SUPPLY

MYERS WATER SYSTEMS
For Homes, Farms, Public or Private Institutions.
Small capacity, hand operated systems for shallow or deep wells and cisterns, medium and large capacity outfits for operation by engine or motor, automatically controlled electric house pumps and direct water systems that do not require a pressure tank make up the Myers line which has over fifty years of pump building experience behind it to guarantee dependability and satisfactory service. Catalog No. HP24 shows complete line. Ask for your copy today.
DEEP WELL WATER SYSTEM
WATER LINE AT 40 POUNDS PRESSURE
The F. E. MYERS & BRO. CO.
Ashland, Ohio
Pumps, Hay Tools and Door Hangers

Offset Pattern
Radiator Trap

# TRANE BELLOWS TRAPS

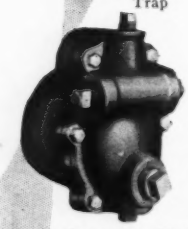
## Steadily Gaining in Popularity


Thermostatic
Drip Trap

When Trane Heating Specialties were introduced in 1921, the Trane Bellows Radiator Trap provided two distinctive features immediately welcomed by the trade: Balanced pressure, and the "signal action" which immediately calls attention to any trap not functioning properly.

Blast
Trap

These features are just as distinctive today, and the traps now have behind them a seven-year record of reliability. The heating world has demanded of us an average production increase of 42 per cent a year since Trane Specialties were introduced. The line is complete—a trap for every purpose, important types just added a few months ago. Write for complete information.


Float Drip Trap
(bellows member
for venting)

THE TRANE CO.
204 Camercn Ave., LaCrosse, Wis.

HEAT CABINETS **TRANE** CONCEALED HEATERS
··· PUMPS AND HEATING SPECIALTIES ···

cordingly. Thus every pressure has its corresponding temperature and if the pressure is reduced sometimes surprising results are attained.

For instance, in the ordinary vacuum system the steam may be assumed to be shot out into the lines and radiators at, say, 5 lb., gauge pressure; in the radiator the heat from this steam is given off and the temperature falls to a point where steam can no longer be vaporized under 5 lb. pressure, so the steam condenses; then the condensation leaves the radiator through the radiator trap and enters a return line, which may be, and usually is, under a partial vacuum. Here the pressure on the water is so far relieved that its boiling temperature under the reduced pressure is less than the temperature of the condensation, and some of the water flashes back into steam.

From this it will be readily understood that the boiling temperature is solely dependent on the pressure under which the process has to take place. Reference to steam tables shows that the boiling point under 10 lb. gauge pressure (25 lb. absolute) is about 240 degrees F. Consequently, when the water temperature in the boiler reaches 240 degrees F., boiling will commence and steam will be formed. This steam will ascend into the steam space over the water and will compress the air already there at 10 lb. pressure, raising the pressure of both the air and the steam as well as the boiling temperature of the water until the safety valve blows or the valve into the steam line is opened.

As soon as the valve into the steam line is opened the steam and air rush out into the steam line, the pressure is relieved and the boiler begins making steam more rapidly than before owing to the reduction of the pressure under which it is operating; no pressure will show on the gauge ordinarily until the whole steam system is filled with steam and then pressure begins to build up again just as it did previously in the boiler. Many persons are deceived by the fall of pressure, when the steam valve is opened and the pressure drops, into thinking that the boiler is not doing as much as it was before because, previously, steam pressure showed on the gauge.

Under a high vacuum, steam can be produced by a boiler at a water temperature of as low as 150 degrees F., and in steam plants located in high altitudes the boiling point of the water is less than the usual 212 degrees F. owing to the reduction of atmospheric pressure under which the boiler is working.

## Measuring Heat Effect

**(Continued from Page 28)**

to have them written and published for the benefit of the heating profession.

The above article was suggested while reading a recent number of the "Domestic Engineering" in which was published a paper read at a meeting of the American Society of Heating and Ventilating Engineers relating to the relative efficiency or condensation effects of radiators.

### APPOINTED GENERAL MANAGER OF MINNEAPOLIS ASSOCIATION

A. E. Harroun was recently appointed general manager of the Minneapolis Retail Plumbers' Association, and assumed his duties July 23. Mr. Harroun was formerly connected with Crane Co. and the Roberts-Hamilton Co. in the capacity of salesman, and is well known to the trade in that city.

He was recently admitted to the Minnesota bar, and will also be the legal advisor to the membership of the organization, having made a specialty of liens and collections for master plumbers.

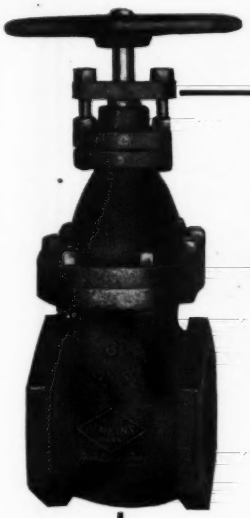


*Fig. 325. Jenkins Standard Iron Body Gate Valve, Screwed*

# Design and construction—both tell a story of strength

The design of a Jenkins Iron Body Gate Valve provides for a globe-shaped body with round-oval neck. This shape is based on the familiar fact that pressure containers possess maximum strength when made in shapes of a circular nature.

The construction, too, tells a story of strength. Metal is thoroughly, evenly distributed throughout the valve; there is no weakness at any point, and in every detail the valve is made for the maximum service not merely the average.

Jenkins Iron Body Gate Valves are made in standard, medium, and extra heavy patterns, inside screw with stationary spindle or outside screw and yoke with rising spindle, screwed or flanged. Let us send you our Iron Body Gate Valve folder.

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646 Washington Boulevard.....Chicago, Ill.

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Bridgeport, Conn. Elizabeth, N. J.
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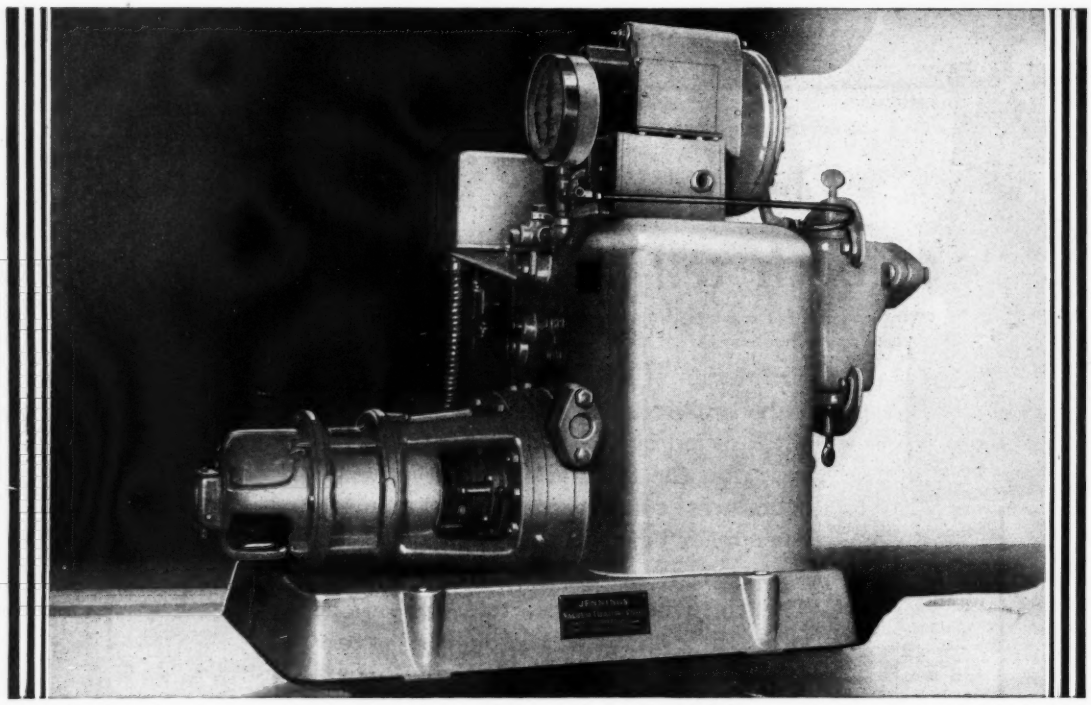
Always marked with the "Diamond"
Jenkins Valves
SINCE 1864

**An all-Jenkins plumbing job**

*Home Savings Bank, Albany, N. Y., Dennison & Hirons, New York, Architect; Clyde R. Place, New York, Engineer; John Dwyer, Inc., Albany, General Contractor; A. J. Eckert, Albany, N. Y., Plumbing Contractor.*



# Pumps air out of heating system
# Pumps condensation back to boiler

A JENNINGS Heating Pump does both. By removing the air, it converts the return line steam heating system into a vacuum system, that is, a system in which the pressure is below that of the atmosphere. By pumping the hot condensate to the boiler, it makes possible unretarded circulation, better heating.

Several benefits are to be noted. The pressure in the system being lower, the boiler generates steam at a lower working pressure. Also at a lower temperature. Less coal is consumed. Firing is easier—also less frequent. The steam flow being unrestricted, all radiation surface becomes effective.

Often less of it is needed. Heating is more economical. The steam does not have to *push* its way through the piping. Because of the existing vacuum, the steam is quickly *pulled* to the radiators. Heat can be gotten up without delay, even in zero weather.

Jennings Vacuum Heating Pumps are motor-driven, automatically controlled or equipped for continuous operation. They are supplied in several standard sizes for return line heating systems in office buildings, apartment houses, hotels, schools and other buildings having from 2500 to 300,000 sq. ft. equivalent direct radiation. Write for Bulletin 71.

RETURN LINE AND AIR LINE VACUUM HEATING PUMPS ∽ CONDENSATION PUMPS ∽ COMPRESSORS AND VACUUM PUMPS FOR AIR AND GASES ∽ STANDARD AND SUCTION CENTRIFUGAL PUMPS ∽ ∽ MARINE PUMPS ∽ ∽ SEWAGE EJECTORS ∽ SUMP PUMPS ∽ FLAT BOX PUMPS ∽ HOUSE SERVICE PUMPS

# Jennings Pumps

THE NASH ENGINEERING CO 41 WILSON ROAD, SOUTH NORWALK CONN.

# How Would You Figure Radiation on This Job?

(Continued from Page 24)

### A COMPARISON OF THE FOUR METHODS

THE RESULTS of these four methods of figuring radiation are scheduled together in Table 6.

There is something wrong, apparently, when the hard-to-heat sun porch receives only 51 square feet by the Illinois Master Plumbers Association rule, while the normally much weaker Chicago Master Steamfitters' rule

Table No 10
Tabulation of Figures for Insulated House

| | Exposure | Quilt Type | | | Average |
|---|---|---|---|---|---|
| | | I.M.P.A. | ASHVE | SRL | |
| SUN PORCH | SE | 45 | 42 | 52 | 46 |
| LIVING ROOM | N S | 60 | 52 | 62 | 58 |
| DINING ROOM | N | 30 | 22 | 25 | 26 |
| BED ROOM | S | 29 | 22 | 20 | 24 |
| BATH | S | 9 | 9 | 9 | 9 |
| BED ROOM | SW | 27 | 26 | 29 | 28 |
| KITCHEN | NW | 25 | 24 | 30 | 26 |
| BREAKFAST | N | 19 | 10 | 24 | 21 |
| PLAY ROOM | NESW | 105 | 138 | 124 | 123 |
| TOTAL | | 349 | 353 | 375 | 360 |

gives 59 square feet. The thumb rules are based, of course, on average conditions, and when the average is displaced ever so little the results diverge rapidly.

We may be willing to agree that the average of the four methods set forth in the right hand column will show sufficient radiation to heat this very ordinarily constructed house.

### THE OLD MILL'S FORMULA

ALL of us remember the old Mill's formula, in which for steam, with continuous heating, the glass was divided by 2, the wall by 20 and the contents by 200. To satisfy my curiosity, and perhaps yours, I have placed the results of this rule in the extreme right hand column of Table 6. It accentuates the fallacy of ignoring ceilings, floors and partitions against cold attics. As long as the room is an average room, the thumb-rules are not far off, but they cannot serve for the ever cropping up odd birds!

### WHAT WILL HAPPEN WHEN INSULATION IS ADDED?

LET us now presume to rebuild the house, using some building insulation, in order that the cost of heating may be reduced, and so that the house may be cooler in summer.

We cannot use the Chicago Master Steamfitters' formula in this case, since it has not yet been developed to meet anything but ordinary construction, but we can use the rules published by the A. S. H. V. E., the Illinois Master Plumbers Association and of "S. R. L."

The rebuilt outside main walls will now be of 4-inch brick backed with 4-inch hollow tile, furred to make a ¾-inch air space, then covered with ½-inch thick quilt insulation and plastered. The ceilings will have 1-inch of quilt insulation placed above the rafters between them and the attic. The floors will have ½-inch quilt placed in a central intermediate position between the joists and between the floor and the plastered ceiling below.

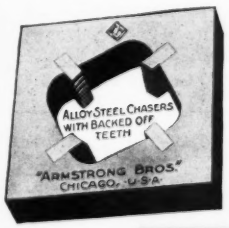
The exposed sides of the playroom have an added ½-inch quilt insulation, intermediate, between the studs.

The sides of the playroom toward the attic are not insulated.


*Stocks and Solid Dies from the*

ARMSTRONG BROS.

Line of *Better* Pipe Tools



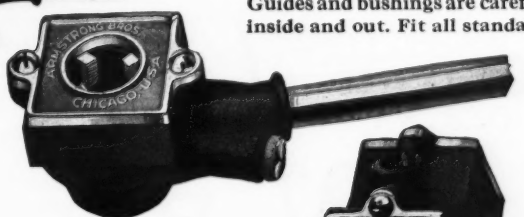
*Standard Solid Die Stock*

These are of *improved* design with bodies of Certified Malleable Iron, black enamel, and handles burnished smooth and dull nickled. Guides and bushings are carefully machined inside and out. Fit all standard dies.

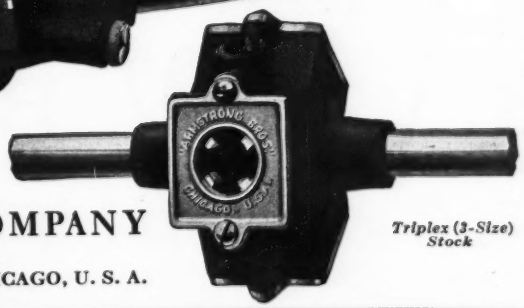
**5-Feature Dies**

Note these features of Armstrong Bros. Solid Pipe Dies:

1. Vanadium Tool Steel Chasers.
2. Free-Cutting Top Rake.
3. Relieved Chasers (Backed Off).
4. Solid Support Behind Cutters.
5. Ample Chip Clearance.




*Reversible Ratchet Stock*




*Triplex (3-Size) Stock*

*Write for Catalog P-10 showing Armstrong Bros. Line of Pipe Tools*

ARMSTRONG BROS. TOOL COMPANY

*"The Tool Holder People"*

323 N. FRANCISCO AVE. CHICAGO, U. S. A.

"Built with a click"

Any mechanic can adjust a Nelson Relief Valve to any required pressure from 1# up to 175# in a few seconds. The click heard at the moment the Nelson registers the maximum pressure is an exclusive feature.

THE STACK HEATER COMPANY
Boston, Massachusetts

**Haas**

*Flush Valves* for use in combination with all styles of bowls for all classes of service to operate under low or high pressure water supply.

*Water Closets* for every type or class of service.

*Frost Proof Closets.* Direct flush or after flushing.

Write for catalog.

**Philip Haas Co., Dayton, Ohio**

**DURO**

Water Softeners

*Automatic Semi-Automatic Hand Operated*

Electric Water Systems
For Shallow or Deep Wells

Filters + Septic Tanks

Let us send you new Price Sheet and all details on Duro Finance Plan which makes sales easy.

The Duro Company
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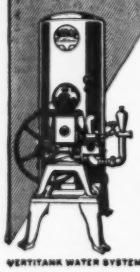
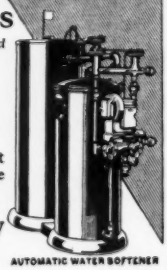


VERTITANK WATER SYSTEM



AUTOMATIC WATER SOFTENER

**P** PHOENIX
**B** BRASS
**F** FITTINGS

EVERY FITTING AIR TESTED UNDER WATER

**P** POPULAR
**B** BECAUSE
**F** FINER

Phoenix Brass Foundry
*Irvington, New Jersey*

Table 7 shows the Illinois Master Plumbers Association insulated house rules. Again we have given the index number and the page.

Insulating this house with a moderately priced substance reduces the radiation required from 437 square feet, the uninsulated average, to 349 square feet, a saving of 88 square feet, or about 20 per cent.

The A. S. H. V. E. computation is shown in Table 8. The temperature of the attic, with the uninsulated house, was assumed at 35 degrees. We are lacking in positive information as to what attic temperatures are to be expected with insulated houses. If the insulation is effective, naturally the attics will be colder than they would have been without the insulation.

We use the A. S. H. V. E. overall coefficient of .121 for a plastered ceiling, 1-inch fiber insulation, no attic floor, an attic space, open roof rafters, sheathing, building paper and a tile roof. This is roughly equivalent to assuming an attic temperature of 27 degrees. The heat loss is thus increased between the playroom and the attic around its edges.

The A. S. H. V. E. rule gives us a little more radiation than the Illinois Master Plumbers rule for the playroom, because of more detailed specifications, which cause an allowance for the colder attic due to insulation, and it gives a little less radiation than the Illinois Master Plumbers' rule for the other rooms.

Table 9 shows the influence of the "S. R. L." leakage arrangements, with generally an increase over both the other rules, but with an intermediate position for the playroom.

Table No 11
Detail of insulation computation

| | ½" on walls | 1" on floors | 1" on ceiling | Total ½" | Total 1" |
|---|---|---|---|---|---|
| SUN PORCH | 105 | 97 | 53 | 202 | 53 |
| LIVING ROOM | 182 | 253 | 138 | 435 | 138 |
| DINING ROOM | 76 | 137 | | 213 | |
| BED ROOM | 76 | 131 | | 207 | |
| BATH | 41 | 35 | 35 | 76 | 35 |
| BED ROOM | 166 | 126 | 75 | 292 | 75 |
| KITCHEN | 122 | 99 | 66 | 221 | 66 |
| BREAKFAST | 44 | 63 | 42 | 107 | 42 |
| PLAY ROOM | 120 | | 720 | 120 | 720 |
| TOTAL | | | | 1873 | 1129 |

1873 +10% Wastage @ 06 gives 123.18 for the ½" insulation.
1129 +10% Wastage @ .09½ gives 117.22 for the 1" insulation.
Total $ 241.40

Table 10 shows the comparative tabulation and the averages for the insulated house. We note that the average of the three rules for the insulated house is 360 square feet, a saving over the average for the uninsulated house of 82 square feet, or a saving of 18.3 per cent, figured on the uninsulated house.

If 75 lb. of $7.00 coal is reasonable for each square foot of radiation in an uninsulated house per season, we save 6,150 lb. of coal by insulating, provided we ignore the probable truth that insulation will reduce the amount of coal per square foot of even the reduced amount of radiation. This 5,775 lb. of coal is worth $21.52, and this is a yearly saving.

The 82 square feet of radiation fairly saves on the initial investment $3.00 per square foot or $246.00.

The quilt insulation installed costs around 6 cents per square foot for the ½-inch thickness, and 9½ cents per square foot for the 1-inch insulation.

We find in this house 2,060 square feet of ½-inch quilt insulation and 1,240 square feet of 1-inch quilt insulation, at a total cost of $241.40. This is the computation

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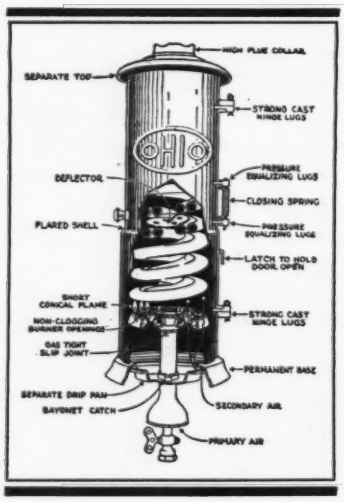


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set forth in detail in an exceedingly clear manner in Table 11.

Thus we observe that the reduction in radiation, by installing insulation, taking the average of all these rules, will pay for the insulation, leaving the owner around $20.00 per year saving on fuel, to say nothing of a house which will be more comfortable in both winter and summer.

I have figured the losses with other kinds of construction, and with other kinds of insulation. It seems unnecessary to repeat the figures here, since I have indicated the method. I have rechecked the figures, and am struck more and more with the care, skill and judgment which must be exercised by the person who computes carefully the amount of radiation required, whatever rule he may use.

This house of course, is peculiar, but most houses have certain rooms to which thumb rules do not apply.

It is popularly believed by some contractor-optimists that since the Chicago Master Steamfitters' rules and the Illinois Master Plumbers' rules have been put forth, all the skill required for so simple a thing as computing radiation has been side-stepped. It is said by some of these optimists that the office girl now figures the radiation. If the optimist will check her up occasionally, I believe he will save himself some costly steamfitter labor during the eventual cold snaps.

One rather amusing episode occurred last winter.

I designed the radiation for a flat building, and being a good one, there was no desire to employ the uncouth process described as "skinning." The heating contract, against my advice, was let to a fitter through the general contractor. This very decent fellow was an optimist and a believer in the exact letter of the Chicago Master Steamfitters' rules, and, having had his office girl re-figure the amount of radiation required, he proceeded toward installing this much-reduced amount. It took the architect, owner, general contractor, the banker, the police department, the committee to enforce the Landis Award, myself, and then some, to stop the job and straighten it out so as to secure what had been contracted for!

## The Schoolmaster Comments on Several Plumbing Problems

**(Continued from Page 32)**

As the work is installed, the automatic cellar drainer appears at such a level that water which it raises could enter the house drain by gravity. Under these conditions it could be omitted altogether.

Fig. 8.—This drawing dates clear back to the problem of last Aug. 13, but we are nevertheless glad to show it. The original floor plans were given without showing any fixtures or their locations. The problem was to locate the fixtures and then show an elevation of the work. The problem appears to have been worked out only to the extent of showing the locations of the fixtures, and this has been worked out in a satisfactory manner.

---

### New Washington Museum

A big thing in the way of museums is contemplated in Washington—a national museum costing $7,500,000, to house everything that shows the beginning, rise and development of American industry. The project is under the direction of Charles G. Abbott of the Smithsonian institute. The space of the Smithsonian is filled to the top, and no more airplanes like Lindbergh's "Spirit of St. Louis" can be received without displacing some other exhibition of almost equal merit.

# "STEP UP GENTS!" and TAKE A CHANCE

DON'T be tricked into taking a chance on "any old kind" of pipe fittings. For there *is* a difference in pipe fittings. Just as great a difference as there is between all-wool and "shoddy." On the surface, it's hard to tell the difference. It takes performance to prove that.

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# MARKETS

## BUSINESS REPORTS FROM LARGE JOBBING CENTERS

### *Contractors' Requirements Are Steady*

*TRADING in plumbing and heating supplies between manufacturers, wholesalers and contractors in the various large jobbing centers was at a fairly brisk pace during the week, according to reports, the steady movement of material into consumption that has characterized the last several weeks continuing, with even a slight expansion in calls upon wholesalers by master plumbers apparent in some sections over the preceding week.*

*While wholesalers in most instances are sufficiently stocked to take care of the ordinary trade needs, they are maintaining this position to a great extent through the placing of numerous average-sized orders with manufacturers and, as a result, the movement of supplies into consumption is quite early reflected on most manufacturers' order books. Naturally, though, this applies more to some commodities than to others, as in some instances wholesalers have either enough material in stock or on order to make it practically unnecessary for them to come into the market at the present time. Reports indicate that heating contractors are experiencing better business than a few weeks back, many of them covering on jobs which will be ready for boilers and radiation in the next few weeks, and this activity, naturally, is being reflected at manufacturing sources. Generally speaking, manufacturers of the major commodities are able to make deliveries as requested.*

## MIDDLE ATLANTIC

### *Contractors Are Well Engaged—*

The average representative of the plumbing and heating industry in the Middle Atlantic section is looking forward to the balance of 1928 with a great deal of optimism, if the reports from those interviewed are a criterion. Most master plumbers and heating contractors, while by no means rushed, are doing at least a fair amount of business, one that is better than at any time during the boom period following the war. Much of this business is being taken at a narrow margin of profit, however, this tending to scare away many firms which insist on a fair return, forcing them out of active competition.

Wholesalers, most of whom show at least a slight loss over last year's sales figures, are in the main doing a business that approaches normal and, according to reports, are doing it at a price basis that is less likely to produce red ink on ledgers than were quotations in 1927. These middlemen also point to the construction figures, mentioned in our last report, which show plans for erections that should produce a good deal of business for the plumbing and heating fields before 1929 arrives.

Price conditions changed little during the week, the only new sheet reaching the wholesalers being one from a cast brass manufacturer, who increased quotations to jobbers on practically all items approximately 5 per cent. Deliveries on most articles are still being made quickly enough to satisfy buyers needs.

**Soil Pipe**

While wholesalers are turning over quantities of soil pipe in keeping with the season of the year, little of this demand is being reflected to manufacturers' shipping departments, as the average middleman had built up his stocks to comparatively safe levels before the recently established price base went into effect. Foundries with stocks close at hand find that the average commitment from the wholesale trade is for amounts small enough to justify truck delivery, the wholesaler apparently preferring to pay the premium for this sized order to purchasing larger amounts. The price situation has not changed during the week.

**Pipe—Brass, Steel and Wrought Iron**

There was the usual last-of-the-month increase in demand for wrought iron pipe, this spurt helping to bring orders-received figures up from the rather low mark which they had set. Brass pipe business is very good, producers state, and steel pipe is also moving at the rate that is usual at this time of the year. Both manufacturers and wholesalers prices on wrought iron and steel pipe are firm.

**Enameled Ware**

Buying of enameled ware is holding its own, being as good as the average seller expected in July, demand exceeding that of July, 1927. Wholesalers still are not showing much interest in future requirements, usually preferring to buy such ware as they will need during a comparatively short period of time, trusting to the large factory inventories to give them what they need when required. This buying policy makes the sales from makers' warehouses in the vicinities large, although the average order placed is rather small. Neither manufacturers' nor wholesalers' prices have changed.

**Pottery**

While current business is not as active as many representatives of potteries would like to see it, the total of shipments into the territory aggregate enough pieces to make an impressive showing, this being well divided between the less expensive ware, and the higher priced items.

The latter material is much in demand, it is stated. Wholesalers, while not building their stocks to high levels, are maintaining fair inventories. Prices are reported firm. Shipments can be made promptly.

**Plumbers' Brass Goods**

Indications from both manufacturers and wholesalers are that demand for both tubular and cast types has shown no reaction from the fairly good levels which it has been holding, and that the month just closing will be at least average. Producers of cast brass say that wholesalers have used the major portion of the goods they ordered early in the year, and are now buying in small lots to round out depleted stocks, with little forward buying. One of the makers of cast brass announced a new sheet for release on August 1, advancing prices to jobbers approximately 5 per cent. Tubular figures are unchanged. Prompt deliveries are the rule.

**Range Boilers**

The lack of a sustained demand from the trade, coupled with the fact that wholesalers do not care to build up their inventories, tends to keep the shipment of range boilers into this territory at a fairly low ebb. Wholesalers show no disposition to contract for boilers, and order in very small lots when their stocks become low, this giving those companies with warehouse stocks in the section a fair amount of truck delivery business. Prices are on the same level. Makers can ship promptly.

**Boilers and Radiators**

Demand is said to be fairly good, with prices about the same as they have been for some time. Wholesalers have fairly good stocks of boilers and radiators, and have fair quantities on contract for shipment in the comparatively near future. No delays in shipping are reported.

**Fittings**

The tone of this market is good, with demand up to a normal peak for the season, especially in view of the fact that many wholesalers stocked well before the June price advances. Prices, too, seem to be firm among both manufacturers and wholesalers. Producers have large enough stocks to insure early deliveries if needed.

# CENTRAL WEST

## *Trading Holds Up Well—*

The expansion in the requirements of contractors which has been under way of late weeks, according to most wholesalers in the Chicago area, continued to make itself felt in a definite manner during the past weekly period, and, almost without exception, jobbers are quite well satisfied with the business that is reaching them at the present time. While it is generally agreed among most wholesalers that business for the first half of the year was behind that of the corresponding period of 1927, it is pointed out that this condition prevailed mainly during the first three months, and, in view of the growth in the amount of construction started and the steadily expanding needs of contractors since that time, the balance of the year is viewed with optimism by most sellers.

The week did not bring forth anything new in the buying methods of wholesalers, the latter confining the bulk of their purchasing, as has been the general rule all year, to relatively small-sized lots conforming with their near-at-hand needs. Exceptions to this are encountered, of course, where price advances by manufacturers make buying in larger quantities good business. Ample stocks are available at most sources of manufacture. Wholesalers, also, are well enough stocked to meet the ordinary trade demands. No price changes of note were announced by manufacturers during the past seven days.

**Soil Pipe**

Although demand on producers is as a whole quiet in view of the fact that most wholesalers' stocks are sufficiently large to take care of the ordinary needs of their master plumber customers, still there is some new buying and a fair activity at local warehouses. The price situation did not change during the week, sheets in the hands of the trade carrying manufacturers' base prices continuing to vary by 2½ points. Most foundries are in a position to ship pipe fairly promptly.

**Pipe—Steel and Wrought Iron**

Reports from steel and wrought iron pipe mills indicate a steadiness in current demand. Mill prices were not changed during the past seven days. Stocks at steel pipe mills are sufficiently large to insure prompt shipments, and the trade's current requirements are quite substantial. A good tonnage of wrought iron pipe is moving from the mills, jobbers maintaining their stocks at levels consistent with trade demands. Mills are delivering wrought iron pipe as requested.

**Fittings**

The majority of wholesalers are well covered on their needs for cast iron and malleable fittings and their stocks represents holdings sufficient to keep abreast of their customers' requirements with the help of the usual fill-in lots, easily obtained from manufacturers. Manufacturers, however, state that they are receiving carload business from some wholesalers. Manufacturers' prices on cast iron and malleable fittings were not changed during the week.

**Enameled Ware**

Representatives of enameled ware manufacturers in this district state that demand from wholesalers is substantial and the latter, in turn, find a steady call for this type of material from master plumbers. Distributors are well stocked on staple ware and can secure prompt replacements from sources of manufacture. Factory prices have not changed.

**Pottery**

A nice business in pottery is reported by wholesalers as evidence that master plumbers are setting fixtures on considerable new construction. As a result, pottery is moving well from sources to replenish jobbers' stocks, frequent small-lot orders usually for immediate shipment being the general rule. Special ware is also moving well as more large-sized projects reach the fixture setting point. Makers state that calls for colored ware total well. Shipments of staples are not being delayed at potteries. Makers' prices were not changed during the week.

**Plumbers' Brass Goods**

Manufacturers of tubular brass goods state that business is maintaining a satisfactory position, prices holding steady and a fair volume of business coming in from wholesalers. While no great amount of future buying is reported, orders for immediate shipment make for a satisfactory current volume. Demand for cast brass items is steady and makers' volumes are substantial. Deliveries in both lines are good.

**Range Boilers**

While range boilers are moving into consumption in about the same volume as during the past few weeks, some jobbers report a quickened demand from the trade which in some cases is necessitating the drawing on manufacturers for additional supplies by jobbers. Stocks at factories are ample with the resultant prompt deliveries by manufacturers. Makers' prices were not changed during the week.

**Boilers and Radiators**

Most manufacturers in this district state that the past week brought forth a substantial volume of business, a growing number of heating contractors covering on jobs which will be ready for installation in a few weeks. Stocks at factories and in makers' local warehouses are ample. Manufacturers' prices have not changed.

# NEW YORK

## *Volumes Average Well—*

Conditions in the Metropolitan area have changed little since last week's report, although some contractors and distributors believe there has been a little more activity during the final two weeks of the month than there was during the period which included a middle-of-the-week Independence day. There is a rather wide diversity in the reports from representative wholesalers in the district. One of the largest in the central sections of Manhattan reports a volume so far this year which is 20 per cent in excess of that the firm enjoyed during the same period in 1927. Another large interest says that business is only fair, that July volume will be below that of June, and will also fall below that of July, 1927. However, this company states that June was one of the best months in its history, and that July would be only about 15 per cent below those figures.

The average wholesaler finds that the prices quoted to him on most of the products covered in this report are at least fairly firm, with one or two exceptions. The wholesalers, in turn, it is reported, are holding up prices to the trade well, and some state their margins of profit are much better than they were some months ago, and a great deal better than they were at this time last year.

Delivery conditions continue to be excellent. Most products are being stocked to a large extent by the producers, with wholesalers and contractors carrying only ordinary inventories, and calling upon sources when material is needed.

**Soil Pipe**

Demand for this product is still rather slow. Those wholesalers who are selling any considerable quantity of soil pipe had apparently either stocked up or had committed themselves for material before the last price increase, and consequently do not have to enter the market to any great extent. While there are still two price levels in existence, little pipe is being sold at the higher sheet according to reports. Deliveries of practically all items are made with little delay, although one source finds trouble in making shipments of some sizes and some fittings.

**Pipe—Brass, Steel and Wrought Iron**

Demand for brass pipe is said to still be rather good, with more than a fair quantity being used by contractors, due in large measure to the residence building in the suburban sections. Steel pipe demand, too, appears to be a little better than it was earlier in the month, and the figures for July will show an appreciable increase over June. Wrought iron pipe makers are getting approximately the volume of business that they expect at this season. Prices to the wholesalers on all three types are firm, and wholesale quotations on the first two are also fairly firm. The majority of brass pipe makers can make prompt shipments.

**Enameled Ware**

Current business in enameled ware continues to be no more than fair. However, contractors are using enough ware so that jobbers find it necessary to ask manufacturers to ship orders that were placed a short time ago. This shipment-against-contract business amounts to a considerable volume. There has been no change in quotations from manufacturers, and wholesale prices to the trade vary little from week to week. There is the usual necessity for early placement of orders for specials, but staples can be shipped promptly.

**Pottery**

Pottery business is fairly good, with the actual demand right now being apparently greater for staple ware than for the higher grade prices, despite a large number of residences being built, and also in spite of the many loft and office buildings being projected and the apartment houses for which permits have been granted. The "big job" business should soon develop into orders, it is felt by many sellers, most of these of course for later delivery. Makers prices are firm. Deliveries are not delayed.

**Plumbers' Brass Goods**

The representative of one tubular maker states that each month this year has been better than the preceding month, and each month has also seen an increase in business over the corresponding month last year. Another large factor also reports excellent business. Cast brass business is also good, according to makers' reports. During the week one cast brass maker announced a new price sheet scheduled for release August 1, advancing prices to jobbers on practically all items approximately five per cent. The average order is being shipped promptly.

**Range Boilers**

Activity in the range boiler market is not brisk at present, contractors buying only when they have actual need, and wholesalers in turn entering the market only when the stocks they have on hand approach depletion. Many distributors have fair amounts on hand, but the average middleman is not heavily stocked. Shipments are not delayed when quick deliveries are wanted.

**Boilers and Radiators**

Demand is said to be fair, with improvement noted by several manufacturers. July shipments should be very good, representatives state, although none had complete figures at the time this report was prepared. One steel boiler maker says business is as good or better than in 1927. Another concern reports its sales in the Metropolitan area considerably greater than in 1927. Prices from makers to wholesalers are said to be a little stiffer than they have been.

**Fittings**

Demand for fittings is only about fair, manufacturers appear to be unanimous in stating. The average wholesaler has at least a fair stock of all types of fittings on hand, and has not been forced to purchase because of lowered inventories. No changes in price have been made by manufacturers during the week. Most sources are able to ship quickly enough to satisfy buyers.

# NEW ENGLAND

## *Market Presents Bright Aspect—*

The volume of business transacted in the plumbing and heating market in this territory during the week was, from all reports, as of steadily increasing character. Manufacturers in general find that their sales are by this time very nearly commensurate with those for the same period of 1927, for the better demand which has obtained during the past several months has tended to offset the comparatively low sales records of the earlier part of

the year. Representatives of wholesaling houses are almost unanimous in their findings of well sustained activities in most of the main centers throughout the New England states. On the other hand, there are a number of cities, whose supporting industries are rather inactive, which tends to keep down the average construction record for this section.

Master plumbers continue to be in close competition towards the securing of the many larger size operations which are approximating the letting stage, according to some reports. Wholesalers are in receipt of better orders for residential work and find that their pick-up business has grown considerably over the past few weeks. Distribution of most of the major commodities continues to be fairly equally proportioned, with finishing products having made some gain during the week.

Commitments by jobbers beyond their near at hand requirements are rare, for the majority are amply stocked for the present and are being granted good delivery service from sources when stocks in their warehouses become depleted. No price changes of note were received from makers or wholesalers during the past week.

# The Stock Market

**Quotations furnished by Frazier Jelke & Co., Chicago**

| Par Value | 1928 High | 1928 Low | Quotations of July 28, 1928 | * | Bid | Asked | Last |
|---|---|---|---|---|---|---|---|
| 25 | 152¾ | 130½ | American Radiator Co., com | A | 148¾ | 149¼ | 149 |
| 100 | 150 | 142 | American Radiator Co., pfd | A | 149½ | 150 | 149¾ |
| 50 | 74⅛ | 53¾ | Anaconda Copper Mining Co | A | 67 | 67⅝ | 67⅜ |
| NP | 49 | 27½ | Brunswick-Balke-Collender Co | A | 47¼ | 47¾ | 47½ |
| NP | 117½ | 90½ | A. M. Byers Co., com | A & F | 99 | 99½ | 99⅛ |
| 100 | 114½ | 111½ | A. M. Byers Co., pfd | A & F | 112 | 113 | 112½ |
| 100 | 140 | 130 | Century Electric Co., com | G | 130 | 135 | 132 |
| 100 | 106 | 101 | Century Electric Co., pfd | G | 102 | 104 | 102 |
| 50 | 6 | 4 | Chicago Nipple Mfg. Co., "A" | B | 2½ | 3½ | 3 |
| 50 | 3 | 2 | Chicago Nipple Mfg. Co., "B" | B | 1½ | 2 | 2 |
| 25 | 47½ | 45 | Crane Company, com | C | 45 | 45½ | 45⅛ |
| 100 | 121¾ | 118¾ | Crane Company, pfd | C | 120½ | 121¼ | 121 |
| 100 | 94 | 91 | Detroit Brass & Malleable Works | D | 92 | 94 | 92 |
| 100 | 110 | 105 | The John Douglas Co., pfd | I | 105 | 108 | 105 |
| 20 | 23 | 17 | Eagle-Picher Lead Co | I | 16⅝ | 17 | 16⅜ |
| NP | 50 | 32½ | Fairbanks, Morse & Co., com | A | 45½ | 46 | 45¾ |
| 100 | 111½ | 104 | Fairbanks, Morse & Co., pfd | A | 106¼ | 106¾ | 106½ |
| NP | 134 | 96¼ | Johns-Manville Corp | B | 111¾ | 112¼ | 112 |
| 100 | 160 | 150 | Jones & Laughlin, com | F | 155 | 158 | 156 |
| 100 | 123 | 120 | Jones & Laughlin, pfd | F | 120 | 122 | 121 |
| 10 | 21 | 20 | Michigan Copper & Brass Co | D | 19 | 21 | 20 |
| NP | 45 | 30 | Minneapolis-Honeywell Regulator Co | B | 36¼ | 36¾ | 36½ |
| NP | 38½ | 31½ | Modine Mfg. Co | C | 35 | 35½ | 35⅛ |
| NP | 42 | 32 | F. E. Myers & Bro. Co | H | 36 | 37 | 36½ |
| 100 | 136 | 116 | National Lead Co., com | A | 122¾ | 123½ | 123 |
| 100 | 147¼ | 139 | National Lead Co., pfd | A | 144 | 144½ | 144¼ |
| NP | 40⅜ | 14 | National Radiator Corp | B | 14½ | 15½ | 15 |
| 100 | 108 | 104 | Ohio Brass Co., pfd | H | 107 | 109 | 108 |
| NP | 100 | 88¾ | Ohio Brass Co., "B" | H | 90 | 91 | 90 |
| 100 | 101 | 100 | Penberthy Injector Co., pfd | D | 100 | 101 | 100 |
| 25 | 26 | 3 | Pierce, B. & P. Mfg. Corp., com | U | 4 | 8 | 5 |
| 100 | 95 | 20 | Pierce, B. & P. Mfg. Corp., pfd | U | 40 | 60 | 40 |
| NP | 27 | 18 | Richmond Radiator Co., com | B | 17¾ | 18¼ | 18 |
| NP | 40⅞ | 36 | Richmond Radiator Co., pfd | B | 37 | 38 | 37 |
| 100 | 53 | 40 | Scovill Mfg. Co | U | 50 | 53 | 51 |
| NP | 42¼ | 33¼ | Standard San. Mfg. Co., com | A & F | 37½ | 38½ | 38 |
| 100 | 125 | 115 | Standard San. Mfg. Co., pfd | A & F | 125 | 130 | 125 |
| 100 | 55 | 45 | Trenton Potteries Co., com | U | 45 | 55 | 45 |
| 100 | 95 | 95 | Trenton Potteries Co., pfd | U | 95 | 105 | 95 |
| 100 | 300 | 190⅛ | U. S. Cast Iron P. & F. Co., com | A | 242 | 242½ | 242 |
| 100 | 137 | 115 | U. S. Cast Iron P. & F. Co., pfd | A | 125 | 127 | 125 |
| NP | 46 | 38 | U. S. Radiator Corp., com | D | 39 | 40 | 39½ |
| 100 | 106 | 101 | U. S. Radiator Corp., pfd | D | 100 | 102 | 101 |
| 100 | 61¼ | 27 | U. S. Rubber Co., com | A | 33 | 34 | 33⅜ |
| 100 | 109⅞ | 55 | U. S. Rubber Co., pfd | A | 62½ | 63¼ | 63 |
| 100 | 154 | 132⅜ | U. S. Steel Corp., com | A | 144 | 144½ | 144¼ |
| 100 | 147¼ | 138⅝ | U. S. Steel Corp., pfd | A | 141⅜ | 141⅝ | 141⅜ |
| NP | 19 | 15 | Walworth Company | A | 15½ | 16 | 15⅞ |
| NP | 10 | 6½ | Williams Oil-O-Matic Htg. Corp | C | 9 | 10¼ | 9⅜ |
| NP | 106⅞ | 83½ | Youngstown Sheet & Tube Co | A | 90¼ | 90¾ | 90½ |

*Where listed—

A—New York Stock Exchange
B—New York Curb Exchange
C—Chicago Stock Exchange
D—Detroit Stock Exchange
E—Boston Stock Exchange
F—Pittsburgh Stock Exchange
G—St. Louis Stock Exchange
H—Cleveland Stock Exchange
I—Cincinnati Stock Exchange
U—Unlisted Stocks

# *The Metal Market*

| | July 31 | Average June, 1928 | Average Apr., 1928 | Average 1927 |
|---|---|---|---|---|
| PIG IRON— | | | | |
| No. 2 foundry, Chicago, Furnace | $17.50 | $18.00 | $18.50 | $19.66 |
| PLATES AND SHEETS— | | | | |
| Steel boiler plates, Pittsburgh, per lb. | 1.85c | 1.85c | 1.85c | 1.83c |
| Blue annealed sheets, No. 10, Pittsburgh, per lb. | 1.90c | 2.00c | 2.05c | 2.20c |
| Black sheets, No. 24, Pittsburgh, per lb. | 2.60c | 2.70c | 2.75c | 2.91c |
| TIN— | | | | |
| Straits tin | 46½c | | | |
| LEAD— | | | | |
| Chicago | 6.10c | | | |

### The Old Metal Market

**Dealers' Buying Prices**

| | Per lb. | | Per lb |
|---|---|---|---|
| Aluminum clippings | 18 c | Copper, light | 10 c |
| Block tin | 43½c | Copper, uncrucibled wire | 11¼c |
| Brass, light | 6¼c | Faucets and valves | 9 c |
| Brass, heavy mixed | 7½c | Lead, heavy | 5.50c |
| Brass, red | 9¾c | Solder joints | 9 c |
| Copper, crucible | 11¾c | | |

NOTE: Prices are those quoted on Tuesday of this week.

### Soil Pipe

Foundry salesmen report no slackening of the good shipments which they have been making during the past three or four weeks. Jobbers are not anticipating their wants in any large way and even through sizeable assortments in their plants are commonly encountered, increased demand from plumbing contractors make necessary more frequent replacements. The price situation both from makers' and distributors' reports, is unchanged. Shipments from sources are being made about as requested.

### Pipe—Brass, Steel and Wrought Iron

Distributors are aware of better turnovers of their stocks of the three classes of pipe, inasmuch as roughing installations are presently occupying a large part of contractors' attention. Wrought iron pipe mills still report active shipments for industrial consumption and satisfactory receipts from their distributors. Steel pipe consignments to jobbing points are reported as variable, some makers stating that the week just passed was prolific in shipments, others experiencing somewhat of a lull in their releases. Brass pipe continued to hold the interest of both jobbers and contractors. No delivery delays from manufacturing points are noted. No price changes were announced by producers.

### Fittings

From the majority of makers' reports it appears that interest on the part of wholesalers has been increased, especially in the case of cast iron fittings. Consumption needs of malleable and brass fittings are of sizeable nature, and factory representatives are kept well occupied in supplying the quick shipment requests of jobbers when their stocks become low. The latter, however, seem prepared at all times to promptly fill their customers' orders. Deliveries from sources are also being affected in expeditious manner. No price changes were reported by makers during the week.

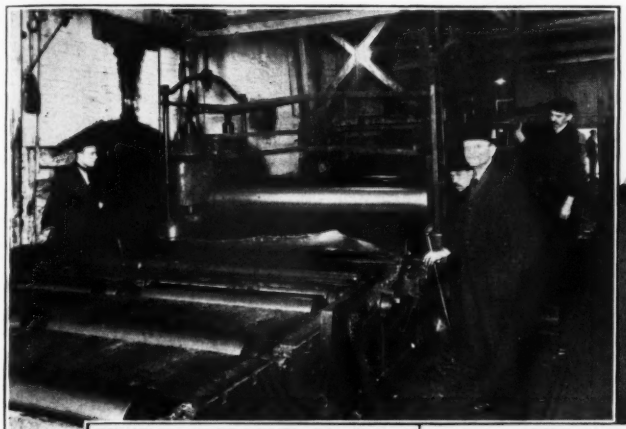
### Enameled Ware

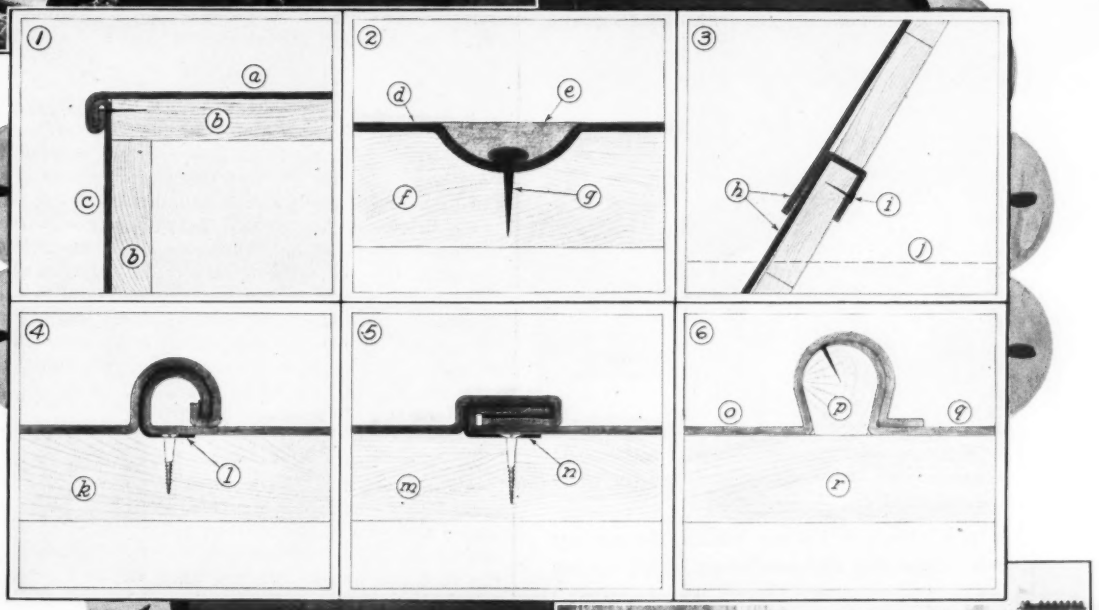
Ware intended for specific operations comprises a good part of wholesalers' commitments, yet their stock orders continue to increase as the season progresses. Several manufacturers who largely supply this territory have re-

(Continued on Page 85)

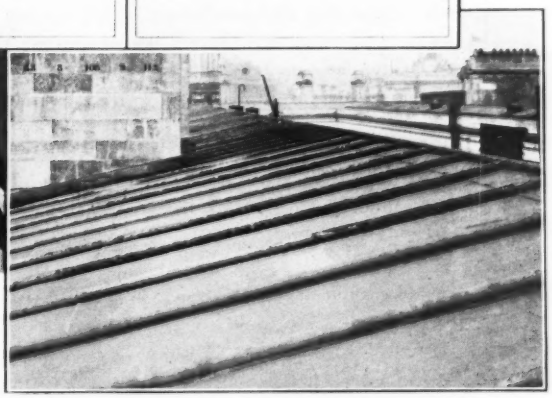
# LEAD—ITS STORY AND ITS USES

*No. 15 in a Series of Picture Stories Describing Lead and its Uses in Plumbing and Sanitation*






## *Sheet Lead and Methods of Joining in Roof Construction*

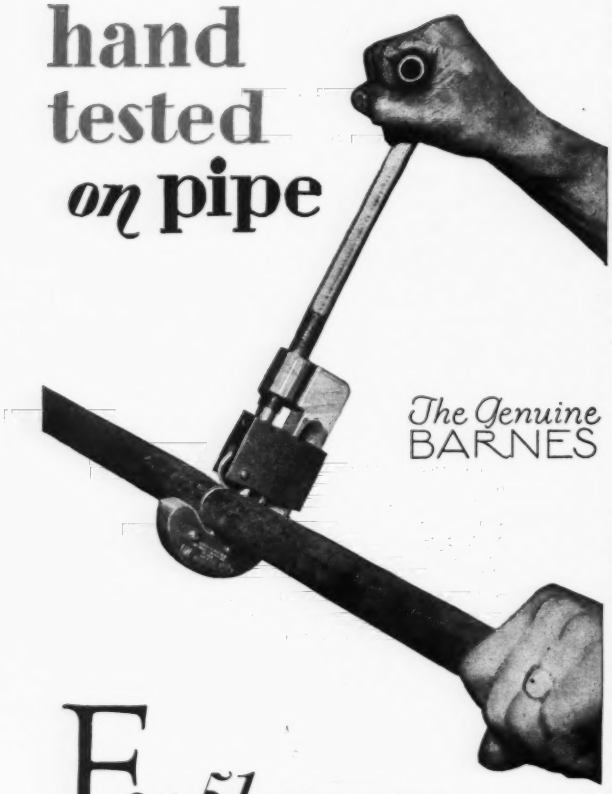


**The master plumber who once fabricated lead rain water leaders and conductors was also interested in sheet lead roof protection which drained the storm water from these roofs and into the sewer. The central illustrations show methods of joining sheet lead in roofing work. They are (1) a double welt used on an angle of woodwork, (2) method adopted over 200 years ago for securing the sheets of cast lead which still cover the dome of St. Paul's cathedral, London, (3) method of fixing sheet lead to sloping roofs, (4) the hollow welt roll, the most watertight form of sheet lead joint known, (5) the double welt with copper clip to prevent the lead from being moved out of place and (6) the wood roll method of joining sheet lead used on roofs on which it is necessary to walk from time to time.**

**At the top of the page is shown an English sheet lead mill. For the use of this photograph and a number of others which have appeared in previous stories of this series, "Domestic Engineering" is indebted to Farmiloe and Sons, makers of lead products, Limehouse, London, E, England, and "Domestic Engineering" here expresses its gratitude for this courtesy.**

**The illustrations at the bottom show a typical lead roof in the city of London.**

# Each cutter hand tested *on* pipe




*For 51 years* The Barnes Tool Company has specialized in the manufacture of the most satisfactory pipe-cutter.

In the production of Barnes wheels, we employ methods in tempering and hardening which science and experience have taught us produce the utmost durability. The *genuine* Barnes knife-blade cutter-wheel is a steel drop forging . . . . not cut from bar stock.

Every *genuine* Barnes of every size is *hand-tested on pipe* before it leaves the factory.

*You'll find this red tag on every Genuine Barnes*

WHEN you place your next order, be particular to specify "the Genuine Barnes Three-Wheel Pipe Cutter." Then you can be sure of a perfect tool that will *"cut true and last a lifetime."*

**The Barnes Tool Company, Inc.**
*Creators of the Genuine Three-Wheel Barnes*
**New Haven , , , Conn.**


# Legal Questionnaire

## Answered by "The Judge"*

**Rights of Heating Contractor Who Discovers That Smaller Boiler Will Be Sufficient and Installs It Without Consulting Owner**

Editor "Domestic Engineering":—We would like the advice of the Judge in regards to a vapor heating system which we installed some time ago and haven't received full payment for as yet. On this job we had a contract to furnish and install one water tube boiler with 1600 sq. ft. rating and 640 sq. ft. of radiation.

Now after we got on the job we found that it only required 580 sq. ft. of radiation to heat the place properly and with the heating system we were to use we could not use the boiler specified on account of the high water line. Then we went to our wholesale house that was furnishing the material and asked them what to do. They advised me to use a water tube boiler with a 1500 ft. rating and said that it would be plenty large enough. This boiler has a water line about 6¾ inches lower than the one specified.

Now that the job is completed the owner will not pay us our bill, although we told him we would take off the price of the radiation that we did not furnish, which would amount to $35. The owner had told us, before we started the job, that all he wanted was a good job and he would leave it to our judgment to do it right.

We have had the job O.K.'d by an engineer from our wholesale house, as he was there during installation and also since the job was completed. Our complete price on this job was $1,575, of which there is a balance due us of $1,200. We would like to make a fair settlement with this party, but would like your opinion as to what a fair settlement would be and what chance we would have of collecting the full amount, excepting the cost of radiation we were short, if we went to court.

Michigan. B. G. H.

---

Answer:—I shall have to suppose two situations in order to answer your question, even generally. If the owner left everything to your judgment, even as to the size of the boiler, and that is what you mean when you say that the owner told you that all he wanted was a good job and that he would leave it to your judgment to do it right, you probably have a good right to collect the full amount of your contract price, less deduction suggested.

On the other hand, if there was any reason why the owner wanted the boiler rated at 1600 sq. ft., if, for instance, you told him that 640 sq. ft. of radiation would perhaps be more than ample, and he said that that was what he wanted so that he could be sure that he had enough heat at all temperatures, then, the owner might have a right to refuse to pay you and compel you to put in the boiler specified.

Your difficulty is, of course, that when you made the change, you did not consult the party most interested, the owner. You state that you had a contract to furnish and install one water tube boiler with a rating of 1600 sq. ft. There might be circumstances in which you would be entitled to make a change in the size of the boiler, without breaking your contract. For example, you and the owner might have talked about the heating system, and he might have said that all he wanted was a boiler which would furnish certain temperatures at certain times and thus

*Every effort is made to the end that these answers may be authoritative. However, we cannot assume any responsibility because of the very nature of the service, which is rendered without a personal interview.—Editor.

# Think about this!!

Enough **DOLE AIR VALVES** *in satisfactory use to service the residential sections of New York, Chicago and San Francisco*

New York

Chicago

San Francisco

THE Heating Trade knows what it means to "Depend on *Dole*" for good air valves. Selling *Dole Valves* means more than an immediate profit. It builds goodwill and brings repeat orders. You, too, should sell *Dole Syphon Air Valves.*

*Automatic All Metal*

**Dole**

*Non-adjustable Thermostatic*

# SYPHON AIR VALVE

The Dole Valve Company, 1913-33 Carroll Ave., Chicago, Ill.

have left the question of the boiler's size entirely to you. Under such circumstances, you probably would have had the right to make a change in the size of the boiler, particularly if you did not have a signed contract. Even under such facts, it would have been much safer to have consulted the owner and secured his consent to a change in the contract.

It is impossible to know, from your facts, whether the size of the boiler was a very material part of the contract. You state at the start that you had a contract to put in a certain boiler, and then later say that the owner told you that all he wanted was a good job and that he would leave it to you to do it right. From your phrasing, it might be that all the owner said was that he would leave it to your judgment to put in the specified boiler correctly. That would be far different from his saying that you could use your own judgment about putting in any size of boiler.

Your customer has much the better case with which to go to court, assuming that you had a written contract—and probably even if your contract was by word of mouth—for you would have to admit that your contract with him was to put in a boiler with a capacity of 1600 sq. ft., that you did not consult him about any change in the size of boiler, and that you installed a smaller boiler than the contract called for. What a man says, when making a contract, may be interpreted by the court to mean quite another thing than is understood by the other party—for the rule of law is that it is what a reasonable man would understand from what was said. I call your attention to this for the reason that the owner's remark that all he wanted was a good job and that he would leave it to your judgment to do it right, is capable of two meanings, as I have said, and the court might find from all the other facts in the case, which you would have to go into in detail, that all the owner meant was that you were to install the specified boiler with your best judgment.

You would start off, in your court case, with the admission that you had not done as you agreed. The testimony might be such that the court would believe that by your contract you were to use your best judgment regarding size of the boiler, among other things, and allow you to collect your contract price less the reduced cost of installing the smaller boiler. On the other hand the owner will probably dispute your claim that everything, even the size of the boiler, was to be left to your judgment. He would have a good argument in support of his claim, for you agreed to do a certain thing and have not done it.

You do not state whether the owner refuses to pay you any part of the balance due you. If he does, you should consult an attorney and bring suit on the chance that the court will make a finding in support of your claim that the owner wanted you to do what you thought best regardless of what your contract stated. If the owner can be persuaded to believe that the smaller boiler meets his requirements fully, then I should say that you would be better off if you made it worth his while to compromise the matter. Perhaps you could agree with him to ask the opinion of some disinterested expert, and then, if the owner is satisfied that he has a sufficiently large boiler for his needs, you can make a compromise settlement.

Litigation is expensive and in your case it is not certain, nor reasonably so, that you could win your suit. Whatever course you decide to take, I suggest that it will be money in your pocket if you consult an attorney who can go into all the facts and advise you accordingly. Something that the owner said, or you said, which you have not stated in your question, might make a great deal of difference in your chances of succeeding in a law suit.

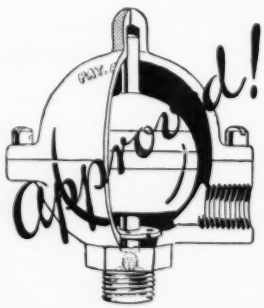
PENBERTHY
PRODUCTS
THE FEATURES THAT SELL THE PENBERTHY AUTOMATIC CELLAR DRAINER
Completely automatic . . . needs no priming. No waste of pressure water . . . no overflow or leakage. Compact . . . possible to use a smaller sump than with any other equipment of like capacity. No corrosion . . . brass, bronze and copper throughout. No interference from slime or floating material . . . all working parts above water level.

Established 1886
PENBERTHY INJECTOR COMPANY
DETROIT
New York Office 71 Beekman St
Canadian Plant Windsor, Ontario

Like a fire hose

A RELIEF valve may seldom be called on to act. But, when the call does come, the valve, like a fire hose must respond.

It is bound to respond if it's a Red Top. Because of the spring-less, lever-less, simplicity of Red Top design and construction. Because of the never-failing gravity princip'e on which the action is based.

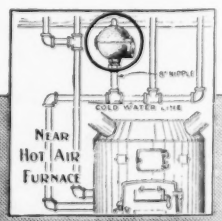



Pressure in the system lifts a weighted piston; gravity closes the valve when relief has been given.

Red Top Relief Valves, Model No. 1 and 2 are approved by the Underwriters Laboratories, Inc.

Neptune Meter Co.
50 E. 42nd St. New York City, N. Y.
Branch Offices in Principal Cities

Sectional view, Model No. 1 for domestic hot water supply systems.




Red Top Relief Valve for Domestic Hot Water Supply

The New
**Robert E. Lee Hotel**
**St. Louis, Mo.**

*Architect*
Alonzo Gentry

*Plumbing Contractors*
The DeBord Co.

*Plumbing Jobbers*
Standard Sanitary Mfg. Co.

*General Contractors*
Collins Construction Co.

*Operators*
Robert E. Lee Hotels, Inc.

**Watrous**

**FLUSH VALVES AND DUOJET CLOSETS**
**Used Throughout**

***Write for full details to***
**PLUMBING DIVISION**
Watrous Flush Valves—Duojet Closets—Self-Closing Basin Cocks—Combination Lavatory Fixtures—Pop-Up Wastes—Liquid Soap Fixtures, etc.

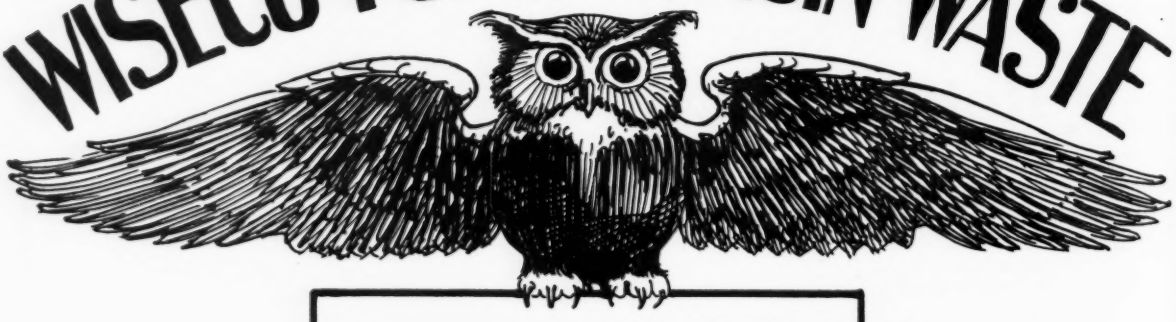
*Sold by leading plumbing jobbers throughout the United States.*

**THE IMPERIAL BRASS MANUFACTURING COMPANY**
**1231 West Harrison Street** CHICAGO

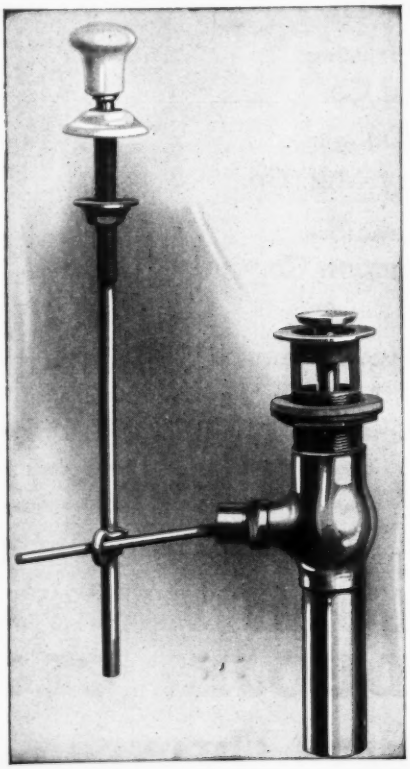
BRANCH SALES OFFICES

R. E. Dooley, 404 Marquette Bldg., Detroit, Mich.
John Sherin, Park View Hotel, Cincinnati, Ohio
Derbyshire & Mack, Real Estate Trust Bldg., Philadelphia, Pa.
W. E. Blair, Jr., % Coronado Hotel, St. Louis, Mo.
E. P. Scales Eng. Co., Bennie Dillon Bldg., Nashville, Tenn.
Thos. J. O'Brien, 1812 Exchange Bldg., Memphis, Tenn.
Dillard-Lewis & Co., Construction Industries Bldg., Dallas, Tex.
H. E. Darton, 506 Carondelet St., New Orleans, La.
R. J. Shank, 925 Grand Ave., Des Moines, Iowa
W. C. Shanley, 811 E. Armour Blvd., Kansas City, Mo.
Rex W. Williams, 402 Scott Bldg., Salt Lake City, Utah
Clarence Drucker, 307 Minna St., San Francisco, Cal.
L. C. Coombs, 1010 North Gardner St., Los Angeles, Cal.
Richard O'Brien, 524 22nd St. North, Seattle, Wash.

# WISECO POP-UP BASIN WASTE



SIMPLICITY



EFFICIENCY

DURABILITY

ECONOMY

SPEND YOUR VACATION

NATURE'S

AN ISLAND SCENE IN CANADIAN WATERS

FAIRYLAND

AT THE THOUSAND ISLANDS, ST. LAWRENCE RIVER

FOR INFORMATION WRITE TO THOUSAND ISLANDS GUESTS ASS'N, WATERTOWN, N.Y.

**Nickel or Genuine Chromium Plate**

**J. B. WISE, INC.**

**WATERTOWN, N. Y.**

New York
Philadelphia
St. Petersburg

Chicago
Los Angeles
Seattle

THE STANDARD OF QUALITY SINCE 1877

# THIS WEEK

## AMONG MANUFACTURERS, WHOLESALERS AND SALESMEN

### CRANE CO. BUYS LANDON RADIATOR CO., INC.

Crane Co., Chicago, has purchased the Landon Radiator Co., Inc., North Tonawanda, N. Y. Details of the transaction were completed on Tuesday, July 24. The Landon Radiator Co., Inc., will continue operation under the same name and no changes have been announced in the personnel of the company.

The Landon company was organized and incorporated in the summer of 1926 by Archer A. Landon, who was formerly vice president in charge of manufacture for the American Radiator Co. Associated with Mr. Landon in the organization were: E. H. Letchworth, Thomas Keator, H. P. Burgard, G. F. Rand and S. H. Knox. The company first started producing its line of steam and hot water radiators in December, 1926.

### NEW WHOLESALE HOUSE IN NEW JERSEY

The State Plumbing and Heating Supply Co., Inc., with headquarters at 31 South Broad street, Elizabeth, N. J., has recently been formed, the plans being to open to the trade on August 1. The new concern is a branch of T. Grunt, Newark wholesaler, and will be managed by Fred Tully, formerly of Pierce, Butler & Pierce Mfg. Corp.

### NATIONAL RADIATOR CORP. TO DISTRIBUTE COATESVILLE BOILERS

The National Radiator Corp., Johnstown, Pa., has recently taken over the distribution of steel heating boilers manufactured by the Coatesville Boiler Works, Coatesville, Pa., according to a joint announcement made July 25 by the two companies. The National Radiator Corp. will carry the Coatesville company's line of low and high pressure, up-draft and down-draft boilers.

### OPENS NEW ADDITION TO PLANT

The Standard Tank & Seat Co., Camden, N. J., has just opened a new addition to its factory. It is a three-story, concrete, fireproof building of about 12,000 square feet, housing the spraying, gluing and shipping departments. With the addition of this building, J. M. Nevous, vice president, stated they will be able to increase production over twenty-five per cent.

### APPOINT NEW ENGLAND REPRESENTATIVE

The Woodbridge Ceramic Corp., Woodbridge, N. J., has appointed P. J. McGoldrick as its representative in the New England territory. Mr. McGoldrick's headquarters are at 214 Mason Terrace, Brookline, Mass.

### APPOINTS NEW JERSEY AND NORTHWEST REPRESENTATIVES

Peck Bros. & Co., New Haven, Conn., recently appointed James F. Murphy, 56 Arsdale Terrace, East Orange, N. J., to cover the New Jersey territory. Mr. Murphy was formerly connected with the plumbing department of Crane Co. in Newark. The company has also appointed Gorden B. Coffey, 433 Stark street, Portland, Ore., to cover the Pacific Northwest.

### DEVELOPMENT LEAGUE OUTLINES PLANS

The progress to date and future aims of the Philadelphia Plumbing and Heating Development League were outlined at a meeting of the members of that body, held at the Elks Club, Monday evening, July 23, an attendance of 485 being recorded.

George Wobensmith, president of the league, presided, and called the meeting to order, introducing E. L. Flentje of the Plumbing and Heating Industries Bureau, who is campaign manager of the league. Mr. Flentje opened by outlining the purposes of the meeting, and stated that the league had been formed for the purpose of enhancing the plumbing and heating industries in Philadelphia. The things learned during the campaign, he stated, would be without doubt applied to similar movements over the country. Going further, he called attention to the fact that this was one of the first movements which take in all three divisions of the industry at a proper valuation for each, and he urged that all sections co-operate to their best ability, as he believes the future of the business depends upon the success of the master plumber and the heating contractor.

Members of the executive committee of the Plumbing and Heating Industries Bureau, who had held a meeting

THE SATURDAY EVENING POST
IF bathtubs and boilers were MOTOR CARS
Plumbing and Heating Industries Bureau
EVANSVILLE, INDIANA
MAKE A HEALTH EXAMINATION OF YOUR HOME

**The advertisement of the Plumbing and Heating Industries Bureau which will appear in the August 18 issue of The Saturday Evening Post**

that day in the city, together with other dignitaries, were introduced by the chairman. These included A. M. Maddock, Thomas Maddock's Sons Co.; W. K. Glen, Crane Co.; Thomas F. Nolan, past president, National Association of Master Plumbers; William J. Woolley, Wolff Co.; R. G. Creviston, general manager of the bureau;. Jere Sheehan, Jr.; president, and E. L. Penfrase, secretary, of the master plumbers' national organization, and John A. Quinn, vice president of the same body.

One of the objects of the meeting was to show proper methods of selling showers, and the stage had been set for such a demonstration. Joseph P. Woods, of the Speakman Co., assisted by a young lady, supposedly the mistress of the house, gave the arguments for shower installations that master plumbers might wish to use, these points finally overcoming the "housewife's" objections.

An interesting speaker was Charles J. Crockett, of A. Harvey's Sons' Mfg. Co., Detroit, Mich., wholesaler. Mr. Crockett explained the recently inaugurated Harvey plan of consumer co-operation, stating that some new methods of doing business must be worked out, as buying ideas had changed because of high wages, the expansion of time payments and the increasing influence of advertising. The "Harvey plan" includes co-operation between the wholesaler and the master, and between the master and the customer, he stated, and so far includes six merchandising features, with 15 more definitely settled upon but not yet put into effect. The first move was to make arrangements with a finance corporation so every master can provide for deferred payments, without having to sign the note himself. This feature has brought in over 100 time payment jobs, aggregating approximately $40,000, in the six weeks the plan has been in operation.

Next, a postcard was worked up, to be scattered in the neighborhood of masters' shops. This card asked the home owner not to let his property run down, urging attention to plumbing and heating systems as well as other factors. So far 118 masters have distributed 72,500 cards. In this connection, Mr. Crockett called attention to the fact that almost anything the home owner purchased on time payments, except plumbing and heating, immediately became second hand, but plumbing and heating immediately enhances the value of his property.

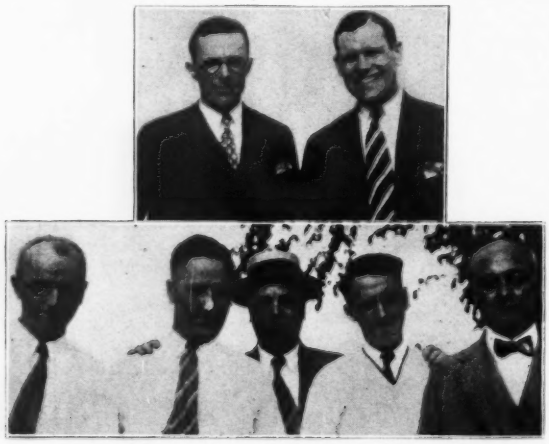
The third step was to make arrangements with a manufacturer of electric refrigerators whereby the contractor can be sales agent for the machine, does not have to make any installations or do any servicing, and gets 15 per cent for each sale. This has resulted in the sale of 26 refrigerators, and has made the Harvey organization add three new people to three departments to take care of queries and extra business. A similar arrangement was made on oil burners, and also on gas ranges, a price being set on the latter that is 75 cents less than one of similar quality sold by the gas company, and yet a figure which gives the contractor $12 profit. Of course, time payments can be arranged on all of these through the finance company.

Masters have been asked to furnish the wholesalers with lists of prospects, and the Harvey company has written them, boosting the master plumber who furnished the list, and suggesting that they get in touch with this man when plumbing and heating needs arise. The company has also run advertisements explaining the Harvey plan, and master plumbers in the localities covered by the newspapers have taken space alongside, typing up with the movement.

Mr. Creviston, speaking briefly on "What the Plumbing and Heating Development League Means to Our Industries," told those present that they were largely responsible for the future development of the industries, as the country was watching the Philadelphia campaign. "The eyes of the industries are focused on Philadelphia," he stated. "Get together, put over this campaign, help each other learn to sell. It can be done through co-operation."

Joseph Ewing, president of Edwards, Ewing & Jones, the advertising agency preparing the newspaper copy, told the members how to take advantage of this advertising, specifically asking them to talk of the equipment being advertised at the time the copy appeared, as at that time the prospect's mind was partially prepared for their sales talk. He urged display of the products, and said that automobile, radio and other articles would not be sold unless display rooms to show them were maintained. "Know your product, show it and talk it. That is all that is necessary," he explained.

Mr. Quinn, speaking briefly, said that methods in effect four or five years ago are antiquated today, and urged that the members study the latest selling ideas, take advantage of the things the league can do for them, and not to hope for results too quickly. Besides the other benefits of the movement, Mr. Quinn pointed out, there is the better feeling between the manufacturer, the wholesaler and the master plumber and heating contractor. Mr. Sheehan and Mr. Penfrase also spoke briefly, both telling of their pleasure at being present, and of the good that the meeting had done them.



**Top row: Fred Scott, Johnson-Washburn Co., Boston; Joseph Prosser of Springfield branch of U. S. Radiator Corp. Bottom row: Morris Meade, architect, of Boston; J. P. Dwyer of Boston, A. D. Rogers, Winchester, Mass.; Frank Gilmore of Boston, Ward Hillman, manager of U. S. Radiator Corp., Boston**

## HEATING TRADES GOLFERS OPEN SEASON

About fifty members and guests of the Massachusetts Heating Trades Golf Association motored to the Black and White Country Club at Marlboro, Mass., for the first golf meeting of the season, on Monday, July 9. Following the tournament, dinner was served in the main dining room of the club, after which the meeting was called to order by President E. T. Keefe.

Due to the absence of the secretary, applications for membership could not be read, but inasmuch as President Keefe knew of ten applications, he made the move that these ten be elected to membership. His motion was seconded and the ten were unanimously elected to membership. President Keefe introduced two guests, George Denyran and Maurice Meade, both architects of Boston. Mr. Denyran held the interest of all present with his recitations, stories and jokes.

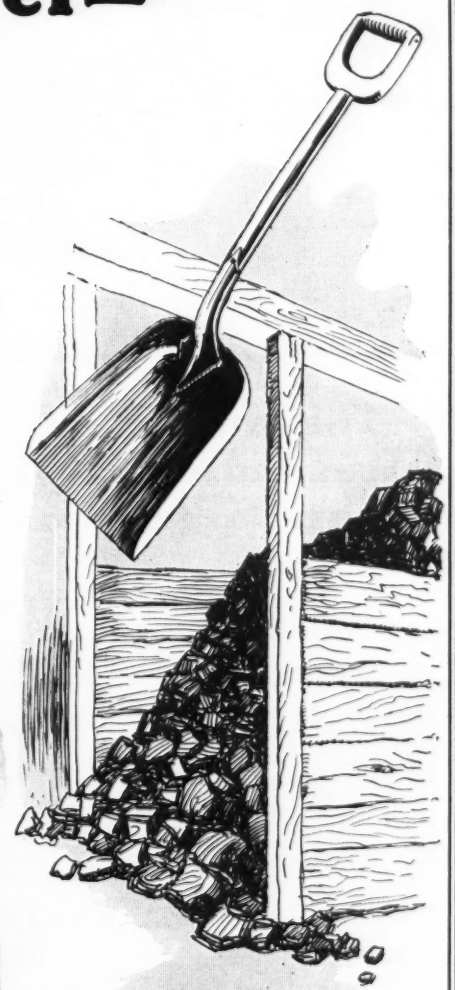
Mr. Keefe awarded first prize for the day to J. P. Dwyer, Jr., who received a carton of cigarettes. As second prize, Arthur Klowoner received a golf bag. Larry T. Tierney

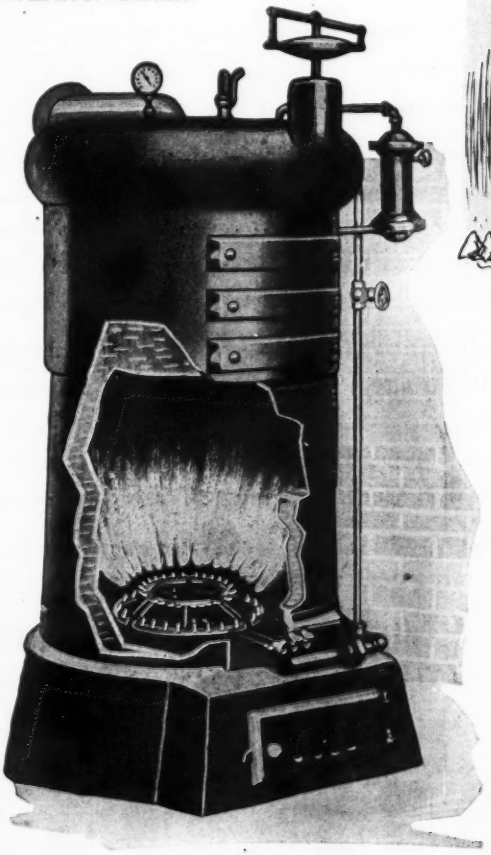
# Retire the Shovel— But Use the Boiler or Furnace!

## BARBER Patented JET GAS BURNERS

Will retire thousands of coal shovels and ash cans during the next few months. The good old coal-burning boiler or furnace will remain—but will be modernized and brought up-to-date—converted into a clean, automatic, efficient, and economical gas heater with Barber CONVERSION Burners.

There's a rich harvest waiting for wide awake heating men that will go right out after this most profitable business. Start now — don't delay! Get our Demonstrating Outfit, Display Signs, Circulars, Broadsides, Consumer's Letters, etc., and begin your Sales Campaign at once. Write us to-day.



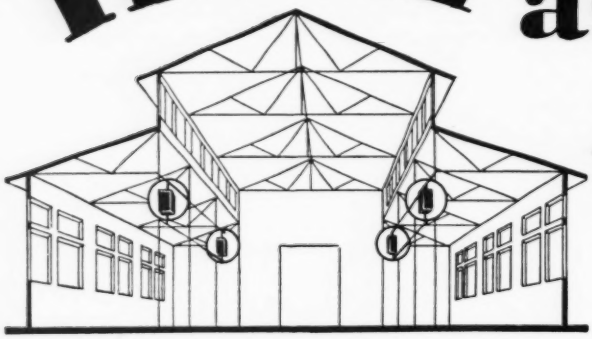


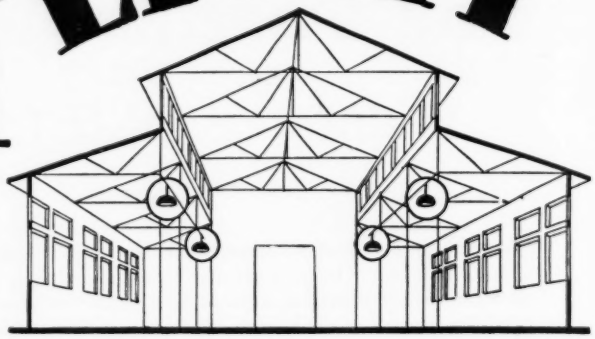
Illustrating the No. 3-R-17 Barber Burner properly positioned in a round boiler. The same idea is carried out in a round warm air furnace; that is, by placing the burner low in the firebox, the longest possible heat travel is obtained. Barber CONVERSION Burners are furnished in sizes and capacities for every house heating need.

**The CLEVELAND GAS BURNER & APPLIANCE CO.**
*Burner Specialists*
**3702-04 Superior Avenue, Cleveland, Ohio**

COMPANY MEMBER OF AMERICAN GAS ASSOCIATION

# HEAT as you LIGHT





## The Modern Way to Heat Industrial Buildings large or small

Modine Unit Heater No. 701 —the equivalent of nearly 2 tons of cast iron radiation.

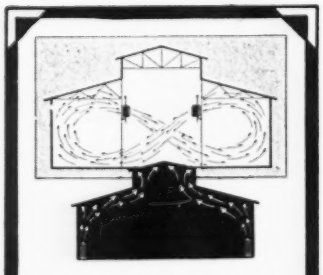


Diagram above shows how the Modine Unit Heater circulates heated air down to working level and keeps it there.

Below — Circulation of heated air with cast iron radiation or pipe coils.

**WHY not provide heating for your factory that is just as efficient as modern industrial lighting? The Modine Unit Heater gives you this new heating effectiveness.**

**Suspending from the steam line 10 to 14 ft. above floor level, just as lights are installed overhead, Modine Unit Heaters force heated air down over the entire floor area, insuring complete comfort to every worker. Each Modine is individually controlled, to be operated as temperature conditions require.**

**You wouldn't expect lights strung along the walls to properly illuminate a factory of large floor area — and particularly if such lights were undirected. Yet such lighting could be no more hopelessly ineffective than cast iron radiation or pipe coils that Modines are supplanting everywhere.**

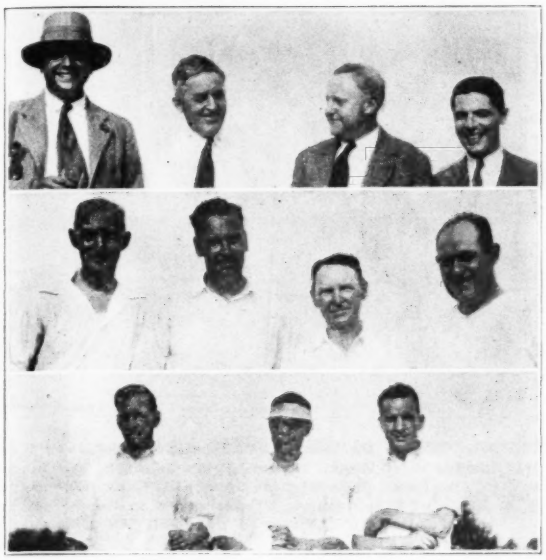
**Install Modine Unit Heaters now and save on first cost, on operating cost. Let us send you complete facts.**

**MODINE MANUFACTURING CO.**
*(Heating Division)*
**1703 RACINE ST. RACINE, WIS.**
*Branch offices in all large cities*
**London Office—S. G. Leach & Co., 26-30 Artillery Lane.**

# Modine Unit HEATER

A MODINE Product

FOR STEAM, VAPOR, VACUUM, HOT WATER HEATING SYSTEMS



**Top row: A. Jordan, Tucker & Rice, Worcester; L. Tierney of Boston; A. A. Gatheman, A. M. Byers Co., Boston; Thomas Swan, Hoffman Specialty Co., Boston. Middle row: H. S. Pike, B. F. Sturtevant Co., Hyde Park, Mass.; C. F. Flint, H. B. Smith Co.; Hugh M. Burnes, Marlboro, Mass.; Robert Crocker of Boston. Bottom row: Arthur Klowner, J. S. Cassedy Co., Boston; W. T. Tuttle, Warren Webster & Co.; John Ross, Reading Iron Co.—Photos taken at the recent meet of the Massachusetts Heating Trades Golf Association**

was also presented with a golf bag for third prize. The fourth prize, a golf club, was received by George Elliott. One half dozen golf balls were given to Charles R. Greco, who received fifth prize.

Among the scores turned in were:

| | G. | H. | Net | | G. | H. | Net |
|---|---|---|---|---|---|---|---|
| F. F. Scott | 104 | 29 | 75 | Frank Gilmour | 133 | 39 | 94 |
| A. A. Gatheman | 110 | 22 | 88 | Maurice Meade | 168 | 40 | 128 |
| A. T. Papineau | 104 | 25 | 79 | C. R. Greco | 127 | 30 | 97 |
| Ward Hillman | 99 | 18 | 81 | C. F. Flint | 105 | 17 | 88 |
| T. Tuttle | 103 | 14 | 89 | Robt. Cracker | 133 | 30 | 103 |
| Geo. Elliott | 106 | 23 | 83 | W. S. Earle | 102 | 21 | 81 |
| G. Ross | 100 | 18 | 82 | E. T. Keefe | 87 | 9 | 78 |
| A. Klowner | 109 | 15 | 94 | T. Berringer | 107 | 25 | 82 |
| L. J. Tierney | 113 | 36 | 77 | Geo. Denyran | 112 | 27 | 95 |
| J. F. Dwyer | 114 | 35 | 79 | Thos. Swan | 100 | 20 | 80 |
| H. S. Pike | 92 | 14 | 78 | Hugh Burne | 115 | 25 | 90 |
| J. P. Dwyer, Jr. | 131 | 40 | 91 | | | | |

## DELAWARE VALLEY GOLFERS PLAY IN HEAT

A blistering hot day greeted the Delaware Valley trade golfers for their July meet at the Manufacturers Country Club, Orland, Pa., on July 17. The hot weather had a tendency to cut the attendance down somewhat and also the fact that several of the members are on their vacation.

Captain R. G. Savill arranged the play, the morning round calling for 9 holes tournament, and the afternoon play was 18 holes "best ball." E. J. Healy of Washington, D. C., came in with a 47 to win the first prize in the morning round, with Captain Savill right behind him with a 48. W. B. Tomlinson, was two strokes behind Healy with a 49, as was Russell Kleinman with the same score. John Bitzer, Jr., and Chris Weber both had a 50 for the nine holes.

In the afternoon C. W. Cope and George Lang won first prize with a best ball of 93-35-58. R. Knight and R. G. Savill were second with a score of 89-24-65. Third prize went to R. Kleinman and Chris Weber with 95-27-68. C. P. Hackett and W. B. Tomlinson got fourth prize with

LIST PRICE
$24
Every Desirable Feature
for positive pressure control is combined in
The KAINER PRESSURE GOVERNOR
For Hot Water Heating Systems
It is a compact unit, constructed entirely of bronze, and installed where it is easy to get at.
Its exclusive features make it the easiest pressure governor to sell and the most satisfactory in result.
See your jobber or write us.
KAINER & COMPANY
CHICAGO
761-763 Mather Street
Manufacturers of Plumbing and Heating Specialties

CLIMAX Test Plugs

**Sure Tests Every Time**

Every kind of pipe test no matter what the pipe or how difficult the job can be done properly with Climax Plugs.

Every kind of a plug you want, when you want it.

*Use Climax Test Plugs and Climax Cellar Drainers.*

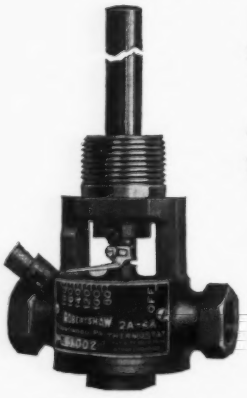
**Climax for Sure Test**

THE C. M. KEMP MFG. CO.
MANUFACTURERS OF
PLUMBERS' SPECIALTIES
405-419 E. OLIVER ST.
BALTIMORE, MD., U.S.A.

*Chicago, Ill.:* OSCAR C. ANDERSEN, 627 Washington Blvd.
*Southern Agents:* J. M. BUTTS & CO., 733 Healy Bldg., Atlanta, Ga.
*Pacific Coast Agents:* WM. P. HORN CO., 58 Federal St., San Francisco, Calif. 509 Wilcox Bldg., Los Angeles, Calif; L. C. Smith Bldg., Seattle, Wash.
*Philadelphia, Pa.:* DERBYSHIRE & MACK, 929 Real Estate Trust Bldg.
*New York City:* A. W. DRAKE, 66 West Broadway
*New England Agent:* ROBT. McKEOWN JR., 46 Cornhill, Boston, Mass.
JOHN W. STILES & SON 700 Prospect-Fourth Bldg., Cleveland, Ohio
W. F. HARPER, 3733 Lindell Blvd., St. Louis, Mo.,
H. F. WILLIS, 520 Securities Bldg., Des Moines, Iowa

*Every Plumber Should Know About the Various Types of*

# ROBERTSHAW
## Thermostats



*Throttling Type*

**Throttling Type**

For Side Arm Water Heaters
or
Automatic Storage Water Heaters
All sizes from ⅜ to 2 inches

Robertshaw Throttling Type Water Heater Thermostats are fully covered in

**CIRCULAR FORM R-4**
**Write for it!**

**Snap-Action Type**

For Storage Water Heaters
and
Furnace and Boiler Temperature Control. Gas Pipe sizes from ½ to 2½ inches

Robertshaw Snap-Action Thermostats are illustrated and described in

**CIRCULAR FORM R-1**
**Write for it!**

*Snap-Action Type*

*Room Temperature Control*

**Room Temperature Control**

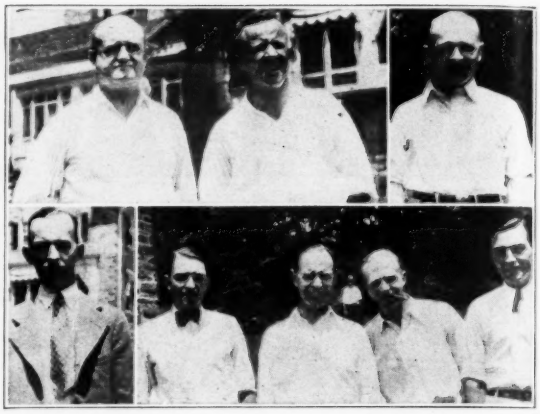
Entirely Gas operated
Non Electric—No Volatile Liquids
Easily Installed
Attractive in appearance
Will control the Room Temperature within a range of 1½ degrees plus or minus

Robertshaw Room Temperature Thermostats are fully described in

**CIRCULAR FORM R-3**
**Write for it!**

***Any or all of the Above Circulars are yours for the Asking.***

**ROBERTSHAW THERMOSTAT CO.**
YOUNGWOOD, PA.

**Top row: Charles Hackett, W. B. Tomlinson and John Bitzer, Jr. Bottom row: Elmer Marlor, P. F. Johnson, Washington, D. C.; C. W. Cope, Philadelphia; George H. Lang, Philadelphia, E. J. Healy of Washington. Photos taken at the recent meet of the Delaware Valley Trade Golf Association**

a 96-26-70. J. Bitzer, Jr., and H. J. Carr came in with a 101-30-71 for fifth prize. Special prizes were awarded to P. T. Johnson of Washington, D. C., for sinking a 60 foot putt, John Ward, Jr., for taking a 13 on one hole, and J. Dwyer for the longest drive of the day. Appropriate prizes of silver and leather goods were selected.

John D. Johnson, Jr., president of the association, presided over a short business session after the dinner in the evening, and short talks were given by C. P. Hackett, John Bitzer, Jr., E. J. Healy and Russell Knight. Host and secretary H. J. Kleinman was unable to be present due to an unexpected business trip.

### NEW ENGLAND GOLFERS PLAY AT CROW POINT

The July meet of the New England Metal Products Golf Association was held at the Crow Point Golf Club at Hingham, Massachusetts, on the nineteenth. Over 30 attended, as everyone likes to go to Crow Point because of its beautiful location.

The members were invited to luncheon at the summer home of James W. Rollins, where a most delightful luncheon was served, and had dinner at the Palm Garden, Nantucket Beach.

Among those attending were the three recently elected

**Tow row: H. D. Nickerson, president, and J. S. Nicholl, secretary and treasurer of the association; M. W. Dennison and R. G. Prouty.—Bottom row: R. W. Hillman, W. H. Thayer, G. F. Elliott, L. W. Smith, T. J. Swan, F. Monroe, D. W. Wade and W. J. Eddy**

# *In the* YEARS *to* COME

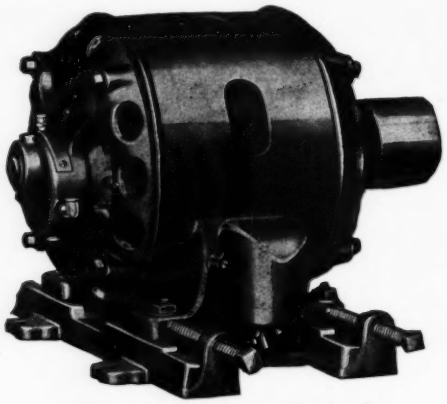
ON Fifth Avenue, Michigan Boulevard, Market Street and on the thoroughfares of many of America's great cities, one may stand today and gaze in amazement at the number of great buildings. Here one sees, materially, that typical American spirit, ever striding quickly forward—reaching, climbing, planning for the years to come. And, in keeping with the architectural achievement, engineering skill has been diligently applied—the specifications for the various materials were written by far-famed architects and engineers, co-operating with industrial leaders in establishing quality.

Included with other dependable equipment are vast networks of pipe lines, behind the walls and beneath the floors. Here, in particular, there could be no compromise with the principle of high quality. Buildings constructed to stand for years to come and to give uninterrupted service through their pipe lines must contain pipe which offers the basic advantage of long life. Thus, in the selection of the tubular equipment for the Industrial Trust Company Building, one of the newest and largest of New England's skyscrapers, "NATIONAL" Pipe was specified for the major pipe tonnage.

The name "NATIONAL" on the specifications means that future service has the added protection of the "NATIONAL" Scale Free Process (partly illustrated below). This process is applied to butt-weld sizes ½ to 3-inch, and the Spellerizing Process to all sizes 4-inch and under. Both processes are designed to make this pipe more resistant to corrosive influences and give added life in the years to come.

INDUSTRIAL TRUST COMPANY BUILDING
PROVIDENCE, RHODE ISLAND
*Architects:* Walker & Gillette; *Associate,* George Frederic Hall; New York City
*Engineers:* J. F. Musselman Associates, New York City
*General Contractors:* Starrett Brothers, New York City
*Heating Contractors:* General Fire Extinguisher Co., Providence R.I.
*Plumbing Contractor:* James McMillan, New York City

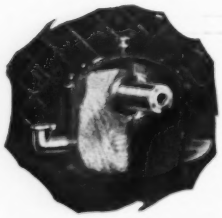
**NATIONAL TUBE COMPANY, PITTSBURGH, PA.**
***District Sales Offices in The Larger Cities***



½ Horse Power Century Type RS
Repulsion Start Induction Single Phase Motor

# Conspicuous Service

Since 1914 Century Type RS Repulsion Start Induction Single Phase Fractional Horse Power Motors have played a conspicuous and constructive part in popularizing electrical refrigerators, oil burners and other household apparatus where continuous reliability and freedom from attention are essential.



*At least one year's continuous 24-hour-per-day operation, WITHOUT REOILING, is assured by the Century Wool-yarn System of Lubrication, standard on all one horse power and smaller frame sizes.*

Hundreds of thousands of Century Single Phase Motors are daily giving continuous service in all types of installations in all parts of the world. "They Keep a-Running"... and have the ability to meet those unusual and unlooked for conditions which frequently occur... Their starting torque is high ... not less than 300% of full-load torque ...Their starting current is low ... not more than 260% of full-load current.

Built in standard sizes from ⅛ to 40 horse power. Temperature rise not more than 40° Centigrade.

CENTURY ELECTRIC COMPANY
1806 Pine St. St. Louis, Mo.
*35 Stock Points in the United States and more than 50 outside thereof*

Century MOTORS

"THEY KEEP A-RUNNING"

new members, W. R. Weiss, manager of Standard Sanitary Mfg. Co., Boston, R. W. Hillman, Boston manager of U. S. Radiator Corp., and M. A. Lynch, Boston manager of Kohler Co., and in addition, the association voted Fred Corcoran, of Corcoran Supply Co., Fall River, and James Richie, Boston architect, as members.

During luncheon it was voted to change the by-laws as follows: "The charge for each member at each golf meet will be left to the discretion of the committee of the day." At dinner it was voted to have the next meet at Hoosick Whisick Golf Club, on August 9.

Prizes for the following were awarded by President Nickerson: low gross in the morning, to John Nicholl with an 85; low net to William Taylor was a 64, and second low net to Frank Monroe with a 69. In the afternoon the award for first low gross was won by L. Waldo Smith with an 81. Low net went to W. L. Adams with a 65, and second low net went to George Elliott with a 66.

The following are the scores for the afternoon:

| Name | G. | H. | Net | Name | G. | H. | Net |
|---|---|---|---|---|---|---|---|
| Swan (Guest).... | 95 | | | Cole (Guest)..... | 80 | | |
| Hillman ..... | 85 | 18 | 67 | Bradshaw ..... | 95 | 23 | 72 |
| Elliott .....102 | | 36 | 66 | Ritchie ..... | 93 | 9 | 84 |
| Monroe ..... | 82 | 16 | 66 | Donoghue ..... | 86 | 15 | 71 |
| Maynard .....115 | | 30 | 85 | Wade ..... | 95 | 16 | 79 |
| Hubbard ..... | 98 | 36 | 62 | Smith ..... | 81 | 16 | 65 |
| Taylor ..... | 89 | 21 | 68 | Thayer .....No card | | | |
| Nicholl ..... | 82 | 16 | 66 | Adams ..... | 89 | 24 | 65 |
| Weiss .....127 | | 36 | 91 | Nickerson ..... | 91 | 18 | 73 |

### MURRAY W. SALES & CO. HOLDS ANNUAL OUTING

At eleven o'clock Saturday morning, July 28, the employes and executives of Murray W. Sales & Co., Detroit, Mich., wholesalers, started the second annual picnic of the concern with a baseball game between the shop and store teams. The outing was held at Woodland Beach, and from the beginning until late in the afternoon races and contests were held.

Attractive prizes for first and second places in the races were awarded the fortunate winners, while winners of the team contests were awarded cigars. Prizes were also given for the largest family present, the oldest person present, the youngest baby present, the tallest woman and the shortest man. Ice cream and pop for the children and coffee for the adults were served by the compny.

Carter Sales distributed the prizes to those who had earned them. Ray Wentwig was in charge of the games, while P. Brown took charge of the grounds. F. Backus, H. Wetters and B. Dinning acted as life guards for the children, while William Byas, M. Armour and W. Roth judged the winners of the races, of which Stewart Kelly was the starter. T. Mann was in charge of the horseshoe pitching. J. B. Stewart officiated as umpire for the baseball games, and F. Schossow kept the scores.

### LOW SCORES SCARCE AT E. T. G. A. MEET

The beautiful Montclair Golf Club, Montclair, N. J., was the scene of the July meet of the Eastern Trades Golf Association, 41 of the members turning out for the event, staged on Wednesday, the 25th, and partaking of the hospitality of Past President William Hubbard.

Montclair is not especially easy to score on, especially in view of the fact that some of the greens were rather badly burned, making it hard to control a ball when pitched to them, and in some cases temporary greens were used. This kept the Class A players from record breaking gross scores, the low gross of the day being shot by Harold Townsend, of Charles Hartman & Co., who had an 85. First net honors in this division went to George M. Scott, of Child & Scott Co., this player turning in a 94 to an 18


# DONNELLY SPECIAL RELIEF OUTSIDE SPRING VALVE

THIS VALVE fills a long-felt need in plumbing, heating and other mechanical fields, for the following very important reasons:

No washers of any kind are used—the plunger and seat are metal.

It can never build up on pressure or stick on seat.

It is tested and set at a limited stop of 150 pounds, and is then ELECTRICALLY SPOT WELDED, so as to prevent anyone making a plug out of the valve.

The weld must be broken, and the valve made useless, in order to increase the pressure.

Turning the setting nut downward, however, will set the valve at any required pressure from one pound upwards.

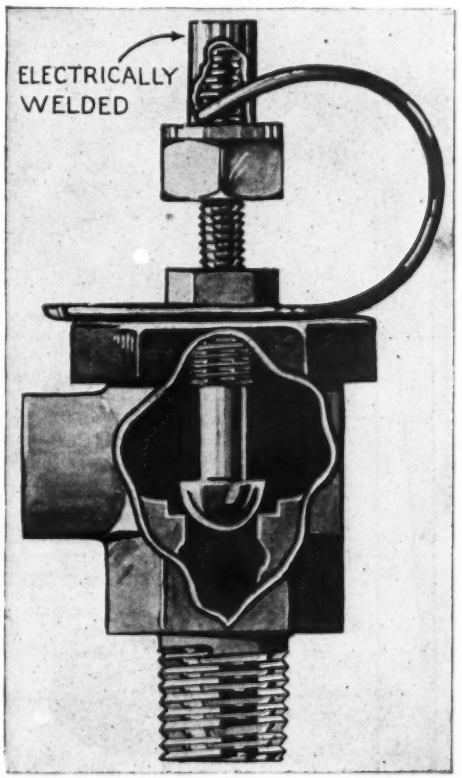
It can be safely installed on hot water domestic, and hot water house-heating boilers, steam, air, oil and gas lines, and is guaranteed to be the finest relief valve on the market.

It is made of the finest grade virgin metal. We guarantee it to function perfectly.

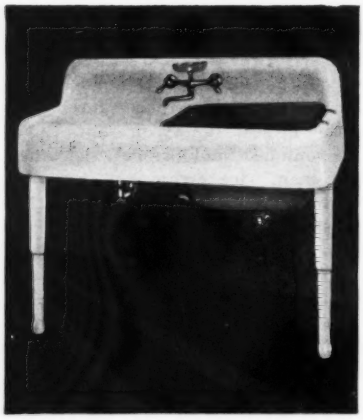
It is endorsed by plumbing inspectors, heating inspectors and engineers all over this country.

This valve is the best insurance you can buy for safety—and the cost is reasonable.

*Ask your jobber to supply you or write us*




**DONNELLY MANUFACTURING COMPANY**
INCORPORATED
29 MILLS STREET MALDEN, MASS., U. S. A.



*Announcing*

**A New Combination Laundry Tub and Sink**

Dealers! Here is a new Rundle sales-builder (pictured above) ready for shipment. It's a new kitchen sink, designed to appeal to the modern housewife. Includes many advanced features in addition to the advantages that have popularized Rundle Ware.

Convenient dimensions: 8-in. apron, 8-in. depth, 8-in. back that fits nicely under the window. Kitchen sink on one side and deep laundry sink on the other. Removable drain board and convenient swinging faucet. Beautiful design, genuine snow-white Rundle enamel. Accurate fitting saves money on installation.

Place your order early for this new Rundle sink, destined to be one of the most popular numbers in the Rundle line. Display it in your windows and in your showrooms, let it build profitable business for you. Write for name of nearest jobber and catalog of complete Rundle line.

RUNDLE MFG. CO.
*Milwaukee, Wis.*

RUNDLE

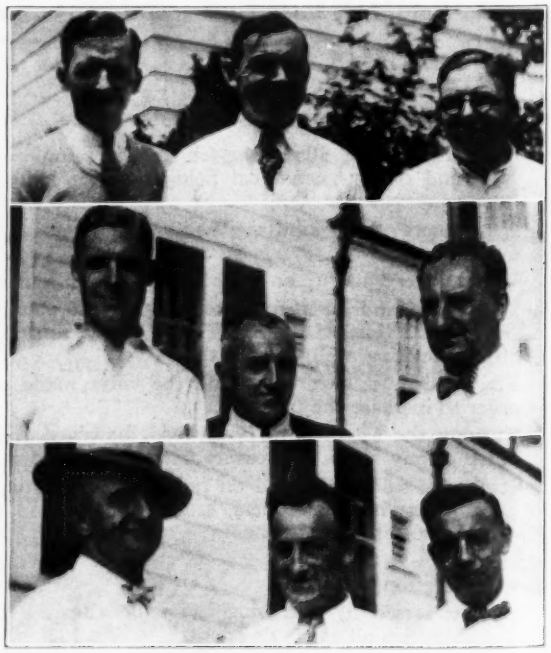
PLUMBERS' SANITARY ENAMELED WARE

BRASS AND IRON GOODS

*The Mark that Has Won the Confidence of Buyers*

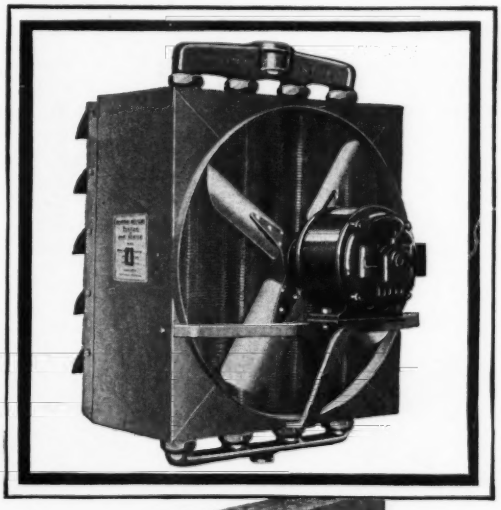
**Top picture: Thomas Dougherty of the Abram Cox Co., and John Ewn'd of W. A. Case & Son Mfg. Co.—Bottom picture: W. A. Davis, Youngstown Sheet & Tube Co., L. C. Soule and W. H. Carrier, both of the Carrier Engineering Corp.**

handicap, and selecting a set of knives and forks for his prowess. The leader in Class B was W. H. Oleson, "Domestic Engineering," who took a lemonade serving set as his prize. Second in Class A was Richard E. Peck, General Electric Co., who selected a pen set, and A. Engle, Jenkins Bros., followed Oleson in Class B, taking a silver pitcher. Mr. Townsend was third in the upper classification, a pair of book ends being his prize, while J. H. Johnston, U. S. Radiator Corp., decided upon a bridge set for his third best score in Class B. W. M. Cosgrove, American Radiator Co., is richer by a carving set for his fourth in "A," and Thomas M. Kellogg, Bishop & Babcock Sales



**Top row: Philip J. Platt, Sloan Valve Co., J. K. Law, Bookhout & Law, Inc., and Dr. Frank Entwistle. Middle row: E. G. Olsen, Fitzgibbons Boiler Co., Thomas Cochran, Heggie Simplex Boiler Co., and R. G. Bookhout, Bookhout & Law, Inc. Bottom row: F. B. Barrett, charter member of G. Richard Davis, H. J. Reeves of R. Kaussner, Inc., and Harold Townsend of Charles Hartman & Co. Photos taken at recent Montclair meet of the Eastern Trade Golf Association**

# For buildings hard to heat



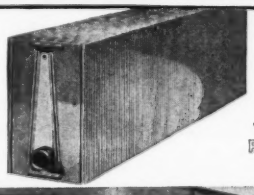
For the economical distribution of heat in
Factories
Railroad Shops
Roundhouses
Warehouses
Mills
Garages
Gymnasiums
and all industrial buildings, as well as in special process rooms where uniform heat maintenance is required.

ANOTHER building hard to heat . . . yet *"Our entire building was comfortably heated, due to the effectiveness of the Herman Nelson Unit Heaters,"* says the F. Wesel Manufacturing Company.

The Herman Nelson hiJet Unit Heater has reversed the process in industrial heating—by directing the jet of warm air at high velocity *to the floor line*. As this air strikes the floor line, it dissipates the cold air strata, and causes a thorough diffusion of the warmed and cold air—resulting in a uniform temperature.

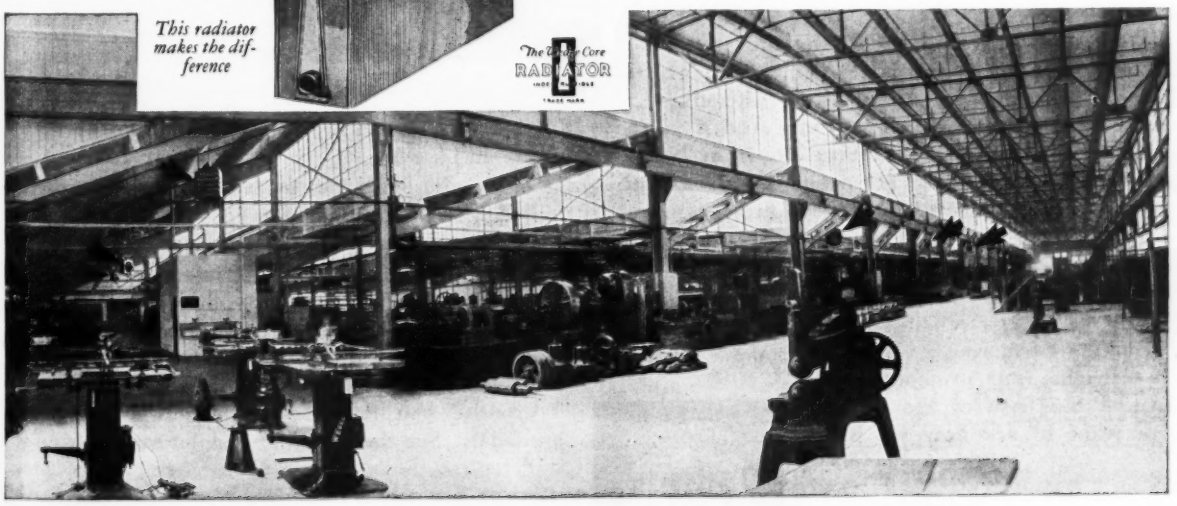
This operating principle, long recognized as the ideal, has only been realized in the development of the hiJet Unit Heater—and in the construction of the Herman Nelson Wedge Core Radiator as the heating element. A steamway or core, it is leak-proof, non-corrosive, *virtually indestructible*, and offers little resistance to air flow.

With thousands of successful installations to its credit, and with universal endorsement by Plant and Business Executives, the hiJet opens up a remarkable sales and profit opportunity for Heating and Ventilating Engineers and Contractors. Send coupon now for full information.



*This radiator makes the difference*

The Wedge Core RADIATOR



*F. Wesel Manufacturing Company, Scranton, Pa.*

## The HERMAN NELSON hiJet TRADE MARK UNIT HEATER

*Manufactured only by* THE HERMAN NELSON CORPORATION, *Moline, Ill.*
*Builders of Successful Heating and Ventilating Equipment for Over 20 Years*

*Sales and Service*

| | | | |
|---|---|---|---|
| BELFAST, ME. | SAGINAW | GREEN BAY | DENVER |
| BOSTON | DETROIT | MINNEAPOLIS | SALT LAKE CITY |
| NEW YORK CITY | CLEVELAND | ST. LOUIS | SPOKANE |
| UTICA | COLUMBUS | BIRMINGHAM | PORTLAND |
| BUFFALO | CINCINNATI | ATLANTA | SAN FRANCISCO |
| PHILADELPHIA | TOLEDO | MEMPHIS | SEATTLE |
| SCRANTON | INDIANAPOLIS | EMPORIA | VANCOUVER |
| PITTSBURGH | CHICAGO | DALLAS | TORONTO |
| CHARLOTTE, N. C. | DES MOINES | KANSAS CITY | WINNIPEG, MAN. |
| GRAND RAPIDS | MILWAUKEE | OMAHA | CALGARY, ALTA. |

GET FREE BOOK

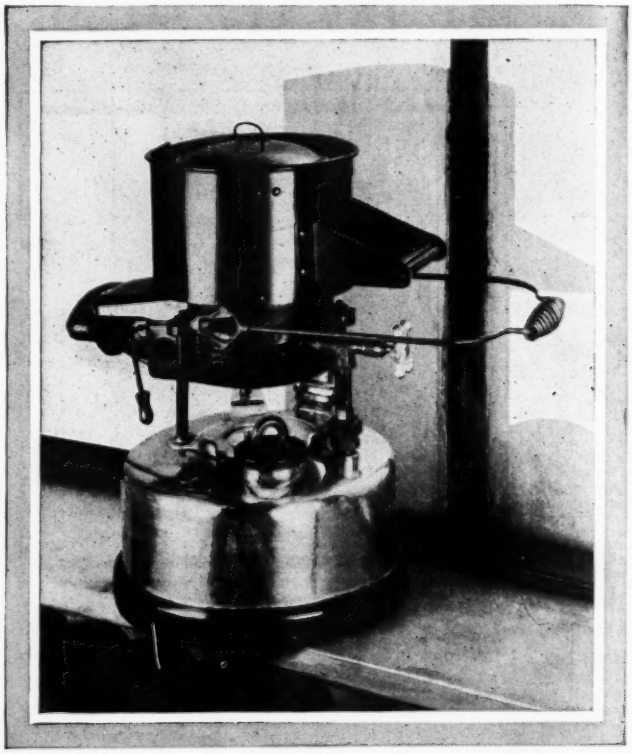
THE HERMAN NELSON CORPORATION
*Moline, Illinois*

Gentlemen:
Please send me book No. 11 containing the facts about the Herman Nelson hiJet Unit Heater.

*Name*..... *Firm Name*.....

*Address*..... *Type of Building*.....

*This is the Clayton & Lambert No. 70 fire-pot with tinner's hood. Produces a working flame in ninety seconds. Flame controlled as easily as a lamp. The burner orifice cannot be enlarged by tightening the needle valve. No chance of ruining the fire-pot that way—that's an exclusive C & L feature. Will heat a pair of soldering coppers and melt a pot of metal at the same time.*



# On the job, *when you want it . . .* all the time

WHEN you're in a hurry; when you're working in a high wind; when it's bitter cold; when you've got an indoor job—any time you need a fire-pot you'll be better off if it's a Clayton & Lambert.

You can light it and have it heating things up for you in ninety seconds! Your generator is shielded from wind! And it's so fast-acting that cold weather can't slow it up. And if you're using either Clayton & Lambert No. 70 or No. 60 you've got such a quiet fire-pot you can't disturb anybody. Of course No. 22, the coil fire-pot, makes a bit of noise—but you can't expect such a tremendously powerful blast as that to whisper!

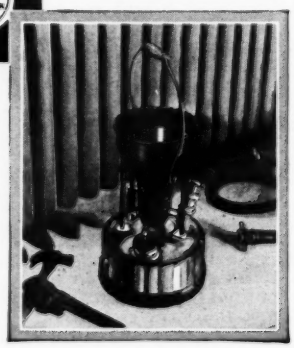
And here's something. They're built like a battleship, as far as strength goes. Everything rugged. Made for hard, rough work. Just take a look at that bright red, protecting ring around the base of the tank, if you want to see how we make Clayton & Lambert fire-pots give you long service, free from trouble.

But in spite of all that extra strength and protection, they're lighter than fire-pots have been. You won't get round shouldered carrying these around.

Just remember that name Clayton & Lambert next time you're buying a fire-pot. If you've got a fire-pot now that gives you exceptionally good service, take a look and see if you don't find the Clayton & Lambert name on it! And we can promise you better performance in the new models. See them at your regular supply house.

"PROTECTION" C&L TRADE MFG. CO. MARK

CLAYTON & LAMBERT
MANUFACTURING CO.
DETROIT, MICHIGAN



*This is the Clayton & Lambert No. 22 fire-pot. It is deservedly popular because of its easily understood design and its powerful blast. Recent improvements and Clayton & Lambert patented features make this model particularly desirable. The burner jet is easily removed to permit cleaning and flushing of the coils. The coil cups on both bottom and sides are made in three pieces and may be quickly detached. Sturdy construction and popular price make this tool a favorite with the plumbing trade.*

Co., took the set of beverage spoons that was awarded for the final prize in "B."

During the morning round, which was a best-ball foursome, a multiplicity of ties and conflicts with afternoon winners gave G. E. Olsen, Fitzgibbons Boiler Co., and J. B. Garfield, American Radiator Co., the prizes in class A, and W. H. Murphy, Walworth Co., and George Hamill, A. M. Byers Co., those in class B. The prizes in each case were specially built golf clubs.

The scores:

**Morning Round**

**Class A**

| | G. | H. | Net | | G. | H. | Net |
|---|---|---|---|---|---|---|---|
| Scott and Wood.. | 93 | 18 | 75 | Townsend and Hubbard ..... | 89 | 10 | 79 |
| Scott and Garfield | 84 | 9 | 75 | White and Dovel | 93 | 14 | 79 |
| Wood and Engle. | 93 | 18 | 75 | Peck and C. E. Olsen ..... | 88 | 18 | 70 |
| Carmer and Wall. | 93 | 15 | 78 | | | | |
| Barrett and Reeves ..... | 81 | 5 | 76 | | | | |

**Class B**

| | G. | H. | Net | | G. | H. | Net |
|---|---|---|---|---|---|---|---|
| Davis and Treadwell ..... | 96 | 22 | 74 | W. H. Oleson and Ruppert .....107 | | 35 | 72 |
| Kellogg and Daugherty .... | 98 | 26 | 72 | Murphy and Hamill ..... | 89 | 20 | 69 |
| Reis and Glore.. | 99 | 24 | 75 | | | | |

**Afternoon Round**

**Class A**

| | G. | H. | Net | | G. | H. | Net |
|---|---|---|---|---|---|---|---|
| R. E. Peck..... | 94 | 18 | 76 | D. S. Cruickshank | 98 | 14 | 84 |
| E. H. Page..... | 92 | 8 | 84 | E. S. White.....107 | | 15 | 92 |
| H. J. Reeves..... | 89 | 4 | 85 | J. K. Law.....No card | | | |
| F. B. Barrett.... | 95 | 5 | 90 | C. G. Wall..... | 99 | 15 | 84 |
| W. W. Hubbard.. | 95 | 12 | 83 | K. V. Carmer....112 | | 14 | 98 |
| H. Townsend.... | 85 | 7 | 78 | J. B. Garfield.... | 87 | .. | 87 |
| W. M. Cosgrove.. | 97 | 16 | 81 | C. S. Woods.....101 | | 18 | 83 |
| A. Dovell .....108 | | 12 | 96 | G. M. Scott..... | 94 | 18 | 76 |

**Class B**

| | G. | H. | Net | | G. | H. | Net |
|---|---|---|---|---|---|---|---|
| J. J. Daugherty..108 | | 24 | 84 | H. W. Reis.....105 | | 23 | 82 |
| J. H. Jonston....115 | | 36 | 79 | Wm. Treadwell..121 | | 24 | 93 |
| G. E. Olsen.....110 | | 20 | 90 | W. A. Davis.....101 | | 19 | 82 |
| W. H. Oleson....111 | | 33 | 78 | L. C. Soule.....109 | | 26 | 84 |
| E. Ruppert .....127 | | 36 | 91 | W. H. Carrier....102 | | 20 | 82 |
| H. G. Bartlett...115 | | 30 | 85 | W. H. Murphy...105 | | 21 | 84 |
| Thomas Yockel..120 | | 36 | 84 | George Hamill...104 | | 19 | 85 |
| T. M. Kellogg....104 | | 24 | 80 | E. G. Williams...116 | | 34 | 82 |
| T. Daugherty....114 | | 28 | 86 | A. Engle ..... | 98 | 19 | 79 |
| A. R. Glore.....108 | | 25 | 83 | | | | |

## NEW YORK SALESMEN ENTERTAIN GUESTS

Three guests from the New Jersey chapter were present at the July meeting of the New York Chapter, National Association of Plumbing and Heating Salesmen, held as usual at the Hotel Pennsylvania, New York City. The three, President E. M. Robinson, Vice President J. L. Buday and E. J. Bender, each spoke briefly as one of the features of the meeting.

Considerable discussion was given to the matter of printing a roster of members, no decision being made at the time, and President William F. Weber was congratulated on his recent marriage. A note of sadness was injected by the announcement of the illness of H. A. Hansen and of an honorary member, Milton A. Lissberger. Bouquets were ordered sent to each. President Weber also told of plans being made by the Philadelphia chapter for the 1929 annual convention, speaking of the $1,500 that has been donated by the city and civic organizations for the affair. Following the entertainment, which included considerable talk of the "Order of the Wrench," a buffet luncheon was served.

## FREDERICK W. GRIFFITH CALLED BY DEATH

Frederick Winters Griffith, one of the founders and president, treasurer and a director of the Garlock Packing Co., Palmyra, N. Y., died at his home in Pasadena, Calif., July 11. He was born at Phelps, N. Y., in 1858, and was graduated from Hamilton College.

**STOCKHAM FITTINGS-**
*and the* man *with the pipe-wrench*

TO THE MAN WITH THE PIPE-WRENCH Stockham offers fittings produced with that sense of responsibility and accuracy which governs his work. Stockham Fittings are made in more than 7500 patterns.

Cast iron or malleable—screwed, flanged, drainage for gas, water, steam, oil or air —cast steel flanged fittings and flanges.

**STOCKHAM**
PIPE & FITTINGS COMPANY
BIRMINGHAM, ALABAMA
Warehouses with complete stocks in
Boston New York Chicago Los Angeles

BY SPECIFYING Heggie-Simplex Steel Boilers, architects and building committees for many important structures have endorsed what Heggie's 35 years have accomplished—the most modern of heating boilers, in which scientific design combines every essential with preeminent quality.

HEGGIE-SIMPLEX BOILER COMPANY
JOLIET, ILLINOIS
*Representatives in Principal Cities*

*Build your reputation on* LEAD *—the dependable metal.*

EAGLE-PICHER

TEN REASONS
*Why Nancy Lee Seamless Shower Curtains Excel*

1 Made of highest quality celanese and percales, coated with genuine heater cured rubber.
2 Do not shrink or stretch.
3 Completely washable. lustre and sheen improves with rubbing.
4 Colors are fast.
5 Do not absorb moisture, dry rapidly.
6 Strong, long wearing. All edges and seams vulcanized into one piece, can't leak curtain.
7 Do not crack, peel, get gummy or harden.
8 Special mica finish gives rubber unusual soft satin effect.
9 Combination of colors on both sides of curtain.
10 Spots easily removed. Rub lightly with soap and water.

VULCATEX, Inc., 100 E. Ohio St., Chicago

FITZGIBBONS STEEL BOILERS
"The Boiler you can afford to own"

Steel-assured dependability and durability
Advanced scientific design
Extraordinary economy
Compact, brickless construction
Practically no maintenance expense
Proved by forty years of faithful service
Heating Sizes from 300 to 36,000 sq. ft. Steam Rating
Power Sizes from 40 to 350 H. P.

Complete information, ratings and dimensions upon request

FITZGIBBONS BOILER CO.
INCORPORATED
570 Seventh Ave., New York, N. Y.



*Customers are satisfied with*

**BADGER Copper Boilers**

Plumbing and heating contractors may assure their customers hot water that is always clean and clear. With a Badger Copper Boiler, there will be no rust or sediment, just high grade operation for years.

Eighty-six years of experience as coppersmiths have helped us to design and construct moderate priced boilers that are guaranteed to give excellent results. The heads are half-round and all joints are riveted to insure safety. All surfaces exposed to water are tinned. They are tested at 200, 250 and 300 lb. pressure.

There is a variety of sizes and pressures ready for prompt shipment. Write for a quotation.

E. B. BADGER & SONS CO.
75 PITTS STREET :: BOSTON, MASS.
New York: 271 Madison Ave. Tulsa, Okla.: Mid-Continent Bldg.

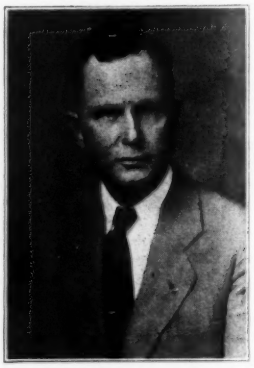

# *Personal Mention*

**Franklin Hardinge,** president of Hardinge Bros., Inc., Chicago, has also been elected general manager of the company to take over the duties occasioned by the resignation of **A. F. Schmudde.** At the same meeting of the board of directors, **Dudley Robinson** was elected vice president and treasurer of the company. The announcement has also been made that **William Kemp,** formerly with the American NoKol Co., has been made director of sales for the Hardinge company.

**Theodore G. Koven,** son of the late G. H. Koven, has been elected president of L. O. Koven & Bro., Inc., Jersey City, N. J., to succeed his father. This is the only change in the management of the company.

**George J. Dehn,** president of the Compound Injector Specialty Co., Chicago, has been made supervisor for the West Side division of the Women's Committee of the Chicago World's Fair centennial celebration, and has already taken up his civic duties by organizing the division.

**John P. Tucker,** whose likeness is shown here, has just been appointed southwestern representative of the Cleveland Gas Burner & Appliance Co. of Cleveland, Ohio. He will call on the plumbing and heating trade in Texas, Oklahoma, Arkansas, Louisiana, eastern Mississippi and eastern Tennessee. He will make his headquarters at 1714 Fairmount avenue, Fort Worth, Texas. Mr. Tucker is a graduate of the A. & M. College of Texas, and he has been in the gas business a number of years, having been connected with the Fort Worth Gas Co., the Lone Star Gas Co. and the Dallas Gas Co.



**John P. Tucker**

**Raymond Seabrook,** secretary of the Nason Mfg. Co., New York City, returned from a trip to Europe on August 1.

**Saul Rendelstein,** Brooklyn, N. Y., wholesaler of plumbing and heating supplies, accompanied by Mrs. Rendelstein, recently sailed for Europe. They expect to go through France, Germany, Italy and the British Isles, returning to New York about the middle of September.

**P. P. Davenport,** of the Trenton Potteries Co.'s Philadelphia office, has been spending a combination vacation and honeymoon, traveling through New York State and New England.

**George Cartwright,** sales manager for S. S. Fretz, Jr., & Co., Philadelphia, has returned to his office after an eventful trip to the West. Among his experiences was being in a railroad wreck, and being in a trolley when lightning struck it and tore the roof off.

**James Dervan,** who has been connected with the American Tube Works of Boston, Mass., for nearly 40 years, has just been elected assistant treasurer and a member of the board of directors.

**Howard C. Leavy,** credit manager of Samuel S. Glauber, Inc., New York City wholesaler, has been ill in the hospital with appendicitis.

**R. H. Feltwell,** Philadelphia district manager for the D. & T. Mfg. Co., St. Louis, and **E. T. Houlihan,** special

representative for the company, recently visited the Chicago office of the company, where they conferred with the company's president, **J. M. Dougherty,** and the newly named vice president and general sales manager, **Robert A. Campbell.** Mr. Campbell was formerly with the Marsh Valve Co., of Chicago.

**Charles Wolfgang,** well known to the trade in the Philadelphia district through long connection with wholesalers and manufacturers, has recently been appointed manager of the Philadelphia branch of the Tomlinson Co., 3650 North Tenth street. Mr. Wolfgang for some years was with Ford & Kendig Co., later going to the Bridgman Co. Before taking his present position, Mr. Wolfgang was on the sales force of the Speakman Co., Wilmington, Del.

**Walter J. Kohler,** president of Kohler Co., who is running for nomination as governor of Wisconsin, gave the keynote speech of his campaign at Fond du Lac, Wis., on July 27.

**J. B. Garfield,** of the American Radiator Co., and for many years captain of the Eastern Trade Golf Association, recently won the championship of the Forest Hill Field Club, Bloomfield, N. J. This is the sixth time Mr. Garfield has won this match play championship since 1912, and in addition, he has been runner-up twice.

**Ford H. Pratt,** southern representative for the Central Foundry Co., New York City, and J. B. Wise, Inc., Watertown, N. Y., will move August 5 from his former location at Lake Ariel, Pa., to 15 Kensington Road, Avondale Estates, Ga.

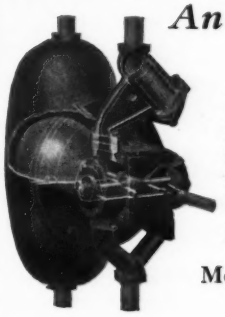
**Morris L. Potts,** recently with the American Radiator Co. in its Philadelphia branch, has joined the sales department of Trane Co., La Crosse, Wis., for which he will cover the Philadelphia territory. Among his former connections are the Thomas Haverty Co., Los Angeles, Calif., the New York Shipbuilding Corp. and the Engineering Division of the U. S. Navy Department.

**Alfred D. Guion,** advertising counselor of Bridgeport, Conn., and well known to the plumbing and heating trade through his addresses to various associations in the industry, has expanded the services of his firm, Alfred D. Guion & Co., through the acquisition of the Rowland Advertising agency, also of Bridgeport.

H. W. Terry

**H. W. Terry,** whose likeness is shown herewith, was recently appointed general sales manager of the Bayley Blower Co., Milwaukee, Wis. After graduating from Syracuse University in 1906, Mr. Terry opened offices as a mechanical engineer in St. Paul, Minn., supervising the mechanical work on a number of large buildings in that city. After the war, in which he took part, Mr. Terry was made general engineer for the Refinite Co., Omaha, Nebr., and later became associated with the Permutit Co., New York City. He has been connected with the advertising business for the past two years, and brings a long experience in engineering and sales promotion work to his new position.

**William B. Conlin,** well known to the heating trade in New York City and vicinity, has joined the sales force of the Oil City Boiler Works, working out of the New York City office, 501 Fifth avenue. Mr. Conlin will cover Manhattan and the New Jersey shore as far as Atlantic City.

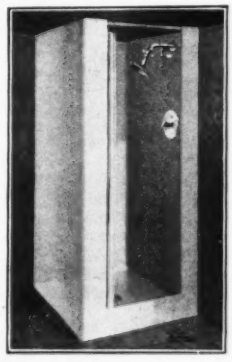
*An ounce of prevention~*

IT isn't your fault when a customer forgets to turn feed water on or off. But it's your fault if you don't at least *tell* him about the device that never forgets the boiler water line. New booklet describes the *self-cleaning* duplex feeder that stands alone.

McDONNELL & MILLER
400 N. Michigan Ave. Chicago

McDONNELL & MILLER
*Self-Cleaning*
DUPLEX FEEDER

BURKS
SUPER-TURBINE
PUMPS
*"Only one moving part"*
— A LIFE-TIME OF SERVICE! —
Dealers: Send for No. 83 Bulletin!
DECATUR PUMP COMPANY
632 E. Cerro Gordo St., Decatur, Ill.



NIEDECKEN SHOWER STALLS
PATENTED
Are Leak Proof
And Complete With
NIEDECKEN SHOWERS
*Write for Bulletin D. 10X*
HOFFMANN & BILLINGS MFG. CO.
MANUFACTURERS SINCE 1855
MILWAUKEE, U. S. A.

SIMPLIFIED VAPOR HEAT

Here's a true Vapor System you can sell at a price to compete with any hot water or vapor system.
Liberal trade discounts.
Educative booklets supplied for distribution to your customers.

Hutchison Regulator Sales Corporation
12 Lispenard Street New York

HUTCHISON SYSTEM

# New Trade Literature

**Kewanee Boiler Corp.'s Catalog 84**

Catalog 84 has just been issued by Kewanee Boiler Corp., of Kewanee, Ill. The catalog is divided into two sections, in the first of which are shown the corporation's coal burning boilers, and in the second, oil burning boilers. A cut-away view accompanies the technical description, and blue print diagrams and specifications are included. The catalog contains sixteen pages and is illustrated in colors.

**"Blind Tests of Brass Pipes"**

Chase Brass & Copper Co., Inc., of Waterbury, Conn., has issued a booklet with the title, "Blind Tests of Brass Pipes." The booklet describes and gives the results of brass pipe tests conducted at the Paterson Vocational School, Paterson, N. J. A number of large illustrations showing the process of testing are included.

**Circular of Lawson Mfg. Co.**

The Lawson Mfg. Co., of Cleveland, Ohio, is distributing a circular describing its new pliers, which, the circular states, fit round, square or hexagon objects, and may be used when battery terminal nuts become corroded so that a wrench will not take hold.

**Booklet of MacAndrews & Forbes Co.**

MacAndrews & Forbes Co., of New York City, has just issued a booklet describing its insulating board for "heat-proofing" homes in summer and "cold-proofing" them in winter. The company's insulating material, the booklet states, is made from the roots of licorice, brought from countries bordering on the Mediterranean Sea. The manufacture of the insulating material and various tests which are applied to it are also described and illustrated.

**"Oxwelded Industrial Piping"**

"Oxwelded Industrial Piping" is the title of a booklet recently published by the Linde Air Products Co., of New York City. It describes the construction, repair and maintenance of oxwelded pipe systems, and is profusely illustrated. The booklet consists of ten pages.

**Water Supply Equipment**

A "Green Book" describing automatic water systems, water softeners, cellar drainers, septic tanks, pump accessories and pneumatic tanks has just been issued by Uniflow Mfg. Co., of Erie, Pa. A sectional view with detailed references is given in connection with the description of the shallow well pump. Deep well installations are also described by means of illustrations and diagrams. Specifications and tables of sizes are also given.

**Booklets of Crane Co.**

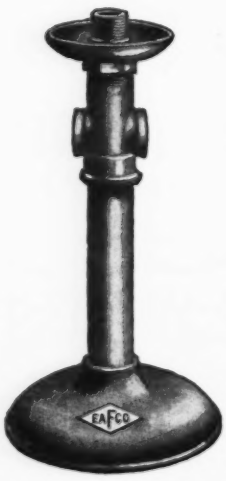
Crane Co., of Chicago, is distributing a booklet describing its automatic water systems. Specifications, diagrams and descriptions of various water systems are included. Another booklet is entitled "Water Softeners, Commercial and Domestic." Various types of water softeners to meet differing requirements are described in detail.

**Stack Heater Co.'s Catalog**

Stack Heater Co., of Boston, has just issued its Catalog No. 34. The catalog contains illustrations of, and descriptive data concerning indirect heaters, gas water heaters, heat interchangers, hot water generators, relief valves, non-by-pass valves, steam water mixers, copper boilers and pipe vises. Much useful technical information is also included.

**"Are Oil Heaters Perfected?"**

The above is the title of a booklet 8½x11 inches in size with 28 pages and cover, issued recently by the Oil


"EAFCO"
Universal
Range Boiler Stand

The "EAFCO" Universal Range Boiler Stand is adjustable to any desired height.

It is easy to install and is strong enough to carry the heaviest loads without buckling or breaking.

*Order the "EAFCO" Universal from your jobber. Be sure that you get the genuine.*

*The* EASTERN FOUNDRY COMPANY

*Philadelphia, Office:* 940 Drexel Bldg.
*New York Office:* 50 Church Street
*Main Office and Factory:* BOYERTOWN, PENNA.
*Boston Office:* P. O. Box 63 Cambridge, Mass.

Heating Institute. The introduction dwells on the difficulties that have been overcome in the manufacture of oil heating devices. The following pages describe and illustrate the burners manufactured by the members of the American Oil Burner Association. These pages, in most cases, show the burners installed, the burner by itself, a cross sectional view; indicate the various types of burners made, the kind of oil burned, the character of the atomization, method of installation and capacity in square feet of radiation.

The Oil Heating Institute is now using the term "oil heater." This was advocated by "Domestic Engineering" several years ago, based upon the belief that the word "heating" suggests warmth and comfort, while the word "burning" suggests destruction, waste and expense. It seems difficult, however, to get the term "oil heater and oil heating" into common use. The title of the book uses the term "oil heaters," but the text in the book refers to these devices as "oil burners."

A request for this booklet sent to "Domestic Engineering" will be forwarded to the Oil Heating Institute.

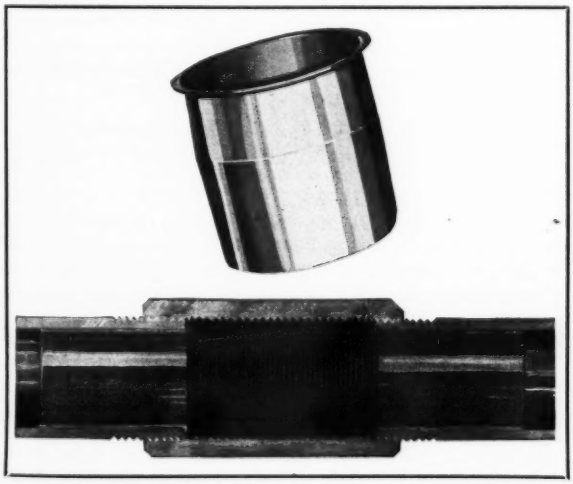
**"Heating Boiler Efficiency"**

A booklet with the title, "Heating Boiler Efficiency," has just been published by the Ball Boiler Co., of Milwaukee, Wis. The company's steel boiler is described, and the various features of its construction, type of design, circulation and installation are described. Two views of the interior of the boiler are shown, and a list of sizes and dimensions is also given.

# *New Equipment*

**A Device Designed to Prolong the Life of Pipe**

It is not surprising, considering the increasing amount of corrosive wastes that are being carried through pipes, that a corporation has been organized to manufacture a device designed to prolong the life of pipe. It is believed

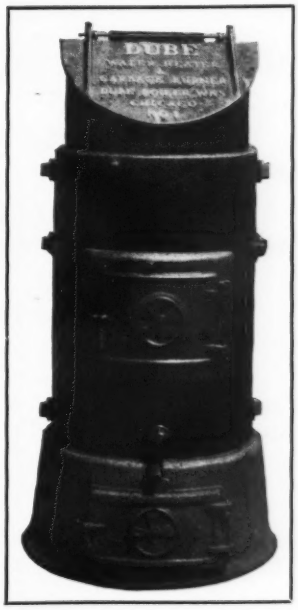


**Above is an illustration of device designed to prolong the life of pipe.—Below is a cross section of a pipe joint showing how this device is used**

by this concern that the weakest spot of the pipe is the joint, and it is at the joint that this device is used.

It consists of a piece of tubular metal alloy which is said to be impervious to the action of piped materials, and is made to fit inside the ends of pipes of any standard size. In use, after the pipe is reamed, the mechanic applies oil, inserts the tube in the end of the pipe, places a flat block


**DUBÉ**
**Combined Garbage Burning Water Heater**



In the big apartment buildings and hotels where Dubé Combined Garbage Burning Water Heaters are used, you will find them giving the very utmost in service at the smallest cost. Architects who come to know Dubé heaters once, never specify anything else.

We'll be glad to tell you the reason why Dubés are gaining in popularity every day. Write us at once.

**DUBÉ BOILER WORKS** 1244 E. 73rd Street Chicago :: Illinois

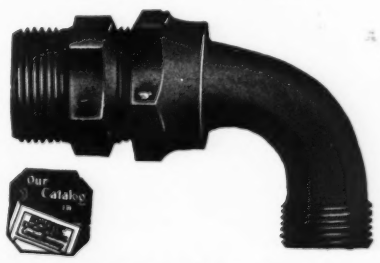
**ECONOMICAL!**

It is real economy to use Trenton Brass Boiler Couplings as well as all Trenton Brass Products because of the fact that they will serve the purpose better and longer. We manufacture Ball Cocks, Flush Valves, Sink Plugs and many other Brass specialties and every one of them is built to endure.

*Ask your jobber to supply you*

TRENTON BRASS & MACHINE CO.
Trenton, New Jersey

*Represented by Rollin C. Wilson*
7 E. 42nd St., New York, N. Y.
261 Franklin St., Boston, Mass.
121 N. Broad St., Philadelphia, Pa.



TANKS

PRESSURE SPECIAL
BLACK & GALVANIZED
RIVETED & WELDED

PENNA. RANGE BOILER CO.
*24th and Washington Ave.*, PHILADELPHIA

UNCONDITIONALLY GUARANTEED

ARROW
TRADE MARK

STEEL TANKS

PNEUMATIC—STORAGE—SPECIAL
*Black or Galvanized*

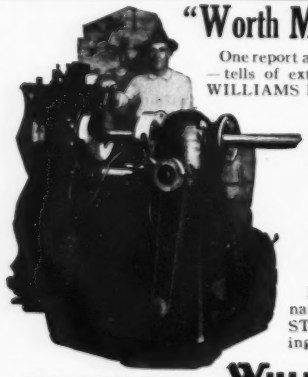
The Novelty Steam Boiler Works Company
Clare and Kloman Streets Baltimore, Maryland

PRICE
&
Quality
Taber
*Midget*
SUMP
PUMPS
No. 1 . . No. 2
Write for
Bulletin MU528

TABER PUMP CO., 290 Elm St., Buffalo, N. Y.

"Worth Many Times its Cost"

One report after another — that we'll send you — tells of extra profits made by users of WILLIAMS Portable Machines.



For instance another well known Massachusetts plumber writes of his "WILLIAMS":

"After two years of hard work our WILLIAMS Portable, 'Willie Williams' is cutting all the pipe for a 130 apartment contract — this machine is worth many times its cost."

Drop us a line for this plumber's name, also for our new booklet "THE STORY OF EXTRA PROFITS" giving many other reports.

WILLIAMS TOOL CORPORATION
ERIE, PENNA.

WILLIAMS PORTABLE
("WILLIE WILLIAMS")
PIPE, NIPPLE AND BOLT THREADER


against the end of the tube and drives it in with a hammer as far as it will go. A flange prevents the tube from going entirely into the pipe and covers the end of the pipe.

It is stated by the manufacturer of this device that it was designed after years of experiment and investigation in industrial plants where pipe had to be renewed every little while due to failure at the joints. It is stated by them that the cutting away of the metal to form threads cold-works the metal, making it much weaker than the remainder of the pipe, that the threads themselves leave a smaller amount of this weakened metal and that special pressure comes on ends of the pipe due to the joint forming an expansion chamber.

These tubes, designed for the saving of pipe, are intended for installations of new pipe in schools, hospitals, office buildings, hotels, industrial plants, etc., as well as homes where pipe is to be replaced due to failure at the joints.

## THIS WAS NEWS 1908 20 YEARS AGO

**August 1, 1908**

The semi-annual meeting of the American Society of Heating and Ventilating Engineers was held Friday and Saturday at the Cataract Hotel, Niagara Falls, N. Y. The meeting was called to order by the president, James Mackay, of Chicago. Professor J. D. Hoffman of Lafayette, Ind., read a paper on the reasons why the science of heating and ventilation should be observed. S. R. Lewis of Chicago read a paper bearing the title, "Simplifying the installation and operation of school heating and ventilating apparatus." There was also a discussion on Professor John R. Allen's paper, "Coefficient of transmission in cast iron radiation."

———1908———

The Master Plumbers' Association of Davenport, Iowa, has been incorporated with a capital of $10,000.

———1908———

The Master Plumbers' Association of Trenton, N. J., held its sixth annual outing at Frese Woods on Wednesday, July 29.

———1908———

*The Compound Injector and Specialty Co., of Chicago, announces that on and after August 1 its factory and office will be located at 42 North Fifty-second avenue, near Kinzie street, where it will occupy its own new building, which has just been completed.*

———1908———

The annual clambake tendered the employes of the Hart & Crouse Co. and the New York Radiator Co. of Utica, N. Y., by those companies, was held Saturday, July 25, at New Hartford, N. Y.

———1908———

The contract for the plumbing system for the new $50,000 public school building that is being erected in Youngstown, Ohio, at Kensington and Bidwell streets has been awarded to Jacob Brenner.

———1908———

A new plumbing ordinance has just been adopted in Decatur, Ill. The ordinance requires the appointment of a plumbing inspector.

———1908———

John H. Gavin of Chicago has received patent on a one-piece lavatory. The patent has been assigned to L. Wolff Manufacturing Co.

# Markets

(Continued from page 60)

ported that their July volumes up to the present writing, were favorable in comparison with the same month of last year. Plumbing contractors are absorbing substantial quantities of the commonly used type of fixtures for replacement work. Quotations of manufacturers are of a firm nature and remain unchanged. No time of extensions in shipments are required by makers.

**Pottery**

While the majority of wholesalers have good supplies of staple ware on hand, replacement orders are becoming more necessary. Installations of pottery, both in renovation and in the lesser expensive class of residential and apartment work uphold, and increase from week to week, movements from jobbers stocks. Potters are consequently benefitted in their receipts, which, although not of large nature, are considerably more frequent. No difficulty is experienced in securing quick shipments either from manufacturing or jobbing points. Potters have not changed their price schedules.

**Plumbers' Brass Goods**

Conditions ranging from seasonally satisfactory to active are reported by makers. Buying, for the most part, by jobbers and contractors is for immedate needs, there being no heavy delivery specifications offered. Stocks on wholesalers' shelves are well varied and ample for contractors' near-at-hand requirements. The majority of plumbing contractors find their needs of fixture trimmings somewhat improved over the past two or three weeks. Deliveries are prompt.

**Range Boilers**

New receipts by manufacturers' representatives indicated a continuance of the previously reported good rate of demand which has attended this market for the past several months. Consumption of range boilers in this territory compels jobbers to keep their stocks of sizeable proportions. Makers, through well sustained production schedules, show ability to ship on short notice. No price changes were announced by makers during the week.

**Boilers and Radiators**

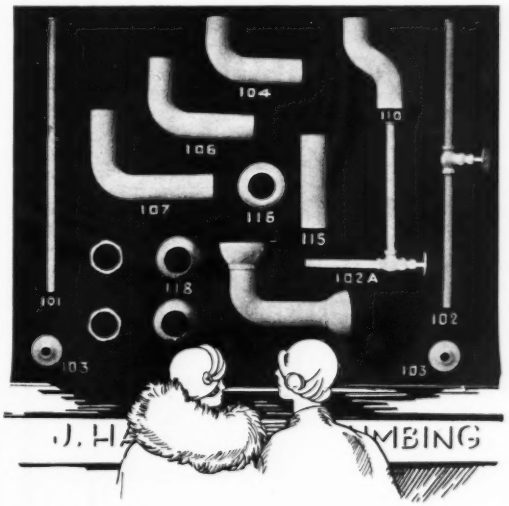
The number of quotations being offered by makers and the decided pick-up in contractors' orders over the past month lend optimism to August and September business, according to sellers. Distributors are becoming more actively engaged in their consignments to new operations. Stocks at manufacturers' local warehouses are of ample proportions. Deliveries are consequently promptly effected. Makers' prices have not been changed.

# PACIFIC COAST

## *Normal Business Obtains—*

General business along the Coast during the past week held at about the same pace as it has maintained for the past few months and, while not as heavy as for the same period of last year, still a substantial amount of business is being done and the amount of new work being contemplated is encouraging to sellers.

Purchasing continues to be mostly in small lots for immediate delivery, distributors keeping their stocks just large enough to take care of the trade's requirements without delay, replacing merchandise in about the same volume as sales. Jobbers' prices to the trade are closely following replacement costs and any changes announced


BATHWHITE CLOSET FITTINGS

POPULAR, PERMANENT WHITE

*Easy to Install*

BATHWHITE Closet Fittings owe their wide use and popularity with home owners and domestic engineers to three things:

1 The current demand for an all-white closet in the home, to harmonize with the china-whiteness of the bathroom background.

2 The enameled finish that is guaranteed to stay white, and which matches exactly the color of the other china bathroom fixtures.

3 All standard sizes used with closets are included in the BATHWHITE Closet Fittings line. This feature makes it simple and quick to install BATHWHITE Closet fittings on any type of closet.

Such well known manufacturers as Crane, Standard, and others equip their closets with BATHWHITE Closet Fittings, for the reasons listed above. You too can easily add extra quality to the closets of your customers by using BATHWHITE Closet Fittings.

That's an idea worth your consideration because it means the way to new accounts and added profits. Your jobber has BATHWHITE Closet Fittings in stock, but before you ask him write us for complete information. Use the coupon.

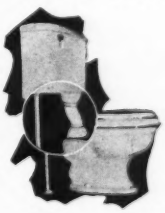
E. H. TITCHENER & CO.

*Home Office and Factory:*

126-130 Walnut St., BINGHAMTON, N. Y.

*Branch Sales Offices:*

2504 Brookfield Ave., Baltimore, Md.
12 Lispenard St., New York, N. Y.
7945 Calumet Ave., Chicago, Ill.



COUPON

Please send complete information regarding BATHWHITE Closet Fittings.

Name_____

Address_____

City_____ State_____

Jobber's Name_____

# drops

of acid waste soon appear leaking from drain pipe when the wrong material is used.

there is one *right* material—Duriron.

it is installed the same as e.h. cast iron soil pipe.

better profit for the Plumber and lifelong satisfaction for the Owner.

Duriron is produced only by—

The Duriron Company Dayton Ohio

by manufacturers are being immediately reflected in quotations to the trade.

**Soil Pipe**

A moderate amount of soil pipe continues to move with most buying being in small lots for immediate use and few inquiries out for future requirements. Distributors generally have well assorted stocks and the trade's orders can be promptly filled. Foundry and wholesale prices remain unchanged.

**Pipe—Brass, Steel and Wrought Iron**

Little change was noted in the demand during the past week, most of the inquiries being in small lots for immediate requirements which distributors could furnish from stocks on hand without delay.

Foreign made steel pipe is again making its appearance in some of the Coast markets and, according to reports, is affecting the sale of the domestic product to some extent. Prices by all concerned remain unchanged.

**Fittings**

A steady although not heavy demand prevails for fittings. The general tendency of the trade is to purchase mostly in small lots for immediate requirements, which most distributors can fill from stocks on hand without delay. Jobbers' prices to the trade are based on present replacement costs and remain unchanged.

**Enameled Ware**

A steady although not heavy demand continues for enameled ware and, considering also the amount of ware reaching the trade outside of the ordinary sources of supply, the gross amount of ware being used at present, while not as heavy as for the same period of last year, is of substantial volume. Distributors generally have well assorted stocks and nearby factories are also in a position to make early delivery on practically all classes of ware, with the result that all of the trade's requirements can be filled without delay. Prices by all concerned remain unchanged.

**Pottery**

A steady although not heavy demand for this commodity continues, which shows little variance from week to week. Distributors are carrying sufficient stocks to take care of the trade's needs without delay, and Coast potteries are in a position to make early shipments. Prices by all concerned remain unchanged.

**Plumbers' Brass Goods**

Plumbers' brass goods continues to move in a substantial volume, which if anything appears to be increasing. Distributors generally are carrying well assorted although not heavy stocks, depending upon nearby manufacturers and manufacturers' warehouses for prompt replacement of merchandise as sold. Distributors' prices to the trade, while varying in the different jobbing centers, remain unchanged.

**Range Boilers**

A light demand for this commodity continues, which does not seem to vary. Distributors have sufficient stocks to take care of the trade's requirements without delay and early delivery can be secured from practically all manufacturing sources. Distributors' prices to the trade are based on present replacement costs and have not been changed.

---

**THREE STEPS IN MERCHANDISING**

Find out what each individual prospect needs—
Make him realize his need—
Satisfy his need—
In other words:
Seek 'em—
Show 'em—
Sell 'em—

—Norfolk Bulletin.

# Convention Dates

**August 21, 22, 23 and 24, 1928.**—A. S. S. E.—The twenty-third annual convention of the American Society of Sanitary Engineering, to be held at the Pfister Hotel, Milwaukee, Wis.

**August 24 and 25, 1928.**—WISCONSIN—The annual convention of the Wisconsin Society of Plumbing Inspectors, to be held in Milwaukee, with headquarters at the Pfister Hotel.

**September 17, 18, 19 and 20, 1928.**—FUELS MEETING.—The Second National Fuels Meeting, at Cleveland, Ohio, under the auspices of the Cleveland Section of the American Society of Mechanical Engineers.

**October 15 to 19, 1928.**—A. P. H. A.—The fifty-seventh annual meeting of the American Public Health Association, to be held at the Stevens Hotel, Chicago. An exposition will be held in connection with the meeting.

**October 24, 25 and 26, 1928.**—C. S. A.—The thirty-fourth annual meeting of the Central Supply Association, to be held at the Palmer House, Chicago.

**November 19-24, 1928.**—COAL CONGRESS.—The Second International Conference on Bituminous Coal, at the Carnegie Institute of Technology, Pittsburgh, Pa.

**January 28, 29, 30 and 31, 1929.**—A. S. H. V. E.—The annual meeting of the American Society of Heating and Ventilating Engineers, at Chicago, Ill.

**May 23, 24 and 25, 1929.**—N. A. P. H. S.—The fourth annual convention of the National Association of Plumbing and Heating Salesmen, to be held at Philadelphia.

## COMING TRADE EVENTS

**August 4, 1928.**—The annual outing of the Association of Master Plumbers of St. Louis, Mo., to be held at Ramona Hills Park.

**August 4, 1928.**—The annual outing of the Association of Master Plumbers of Kansas City, Mo., to be held at Fairyland Park.

**August 4, 1928.**—The annual excursion of the Master Plumbers and Heating Association of Norfolk, Va., Inc., to be held at Camp Washington, near Yorktown.

**August 6, 1928.**—The first golf tournament of the plumbing and heating industries of Richmond, Va., is to be held at the Laurel Golf Club in that city.

**August 9, 1928.**—The August meet of the New England Metal Products Golf Association, to be held at the Hoosick Whisick Golf Club.

**August 9, 1928.**—The thirty-fifth annual outing of the Passaic Master Plumbers' Association, to be held at Crystal Lake, near West Orange, N. J.

**August 9, 1928.**—The August meet of the Plumbing and Heating Trades Golf Association of New Jersey, to be held at Canoe Brook Golf Club, Summit, N. J.

**August 13, 1928.**—The August meet of the Heating Trades Golf Association of Massachusetts, to be held at the Winchester Country Club, Winchester, Mass.

**August 15, 1928.**—The annual outing of the Master Plumbers' Association of Montclair, Bloomfield, Verona and Vicinity to be held at Idlewild Park, Little Falls, N. J.

**August 15, 1928.**—The annual clambake of the Master Plumbers and Steamfitters Association of Westchester County, N. Y., to be held at Colonial Inn, City Island.

**August 15, 1928.**—The August meet of the Heating and Ven-

**National Director W. A. Bywater of Salt Lake City, Mrs. Frank Bordeau, president of Denver Women's Auxiliary; F. H. Hanlin of Denver; W. S. White of White Valve Co. Photos taken at the recent convention of the Colorado Sanitary and Heating Engineers**

GOETZ

*Showers, Lavatory and Bath Fixtures Create Satisfied Customers*

Because of their attractive design, and durable construction, they are easier to sell to your trade . . . . .

Send for your copy of our new catalog D-100, showing complete line of showers, lavatory and bath fixtures . . . . . .

*Manufactured by*

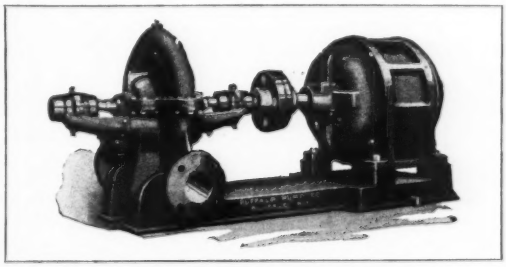
H.E.

ROBERTSON COMPANY

630 N. FRANKLIN ST. CHICAGO, ILLINOIS

GOETZ SHOWERS LAVATORY AND BATH FIXTURES

PHONE SUPERIOR 0801



"Buffalo" Class "S" Pump can be built for either right or left hand rotation

*—for general service*

"Buffalo" Class "S" Pumps are unexcelled for general service. The casing is horizontally divided, with suction and discharge openings in the lower half. The impeller is the double suction hydraulically balanced type.

These pumps are offered for capacities from 15 to 75,000 U.S. gallons per minute.

*Complete particulars gladly sent on request.*

BUFFALO STEAM PUMP COMPANY

483 Broadway Buffalo, N. Y.

*IN CANADA*

Canadian Blower & Forge Co. Ltd., Kitchener, Ontario

PUMPS FOR EVERY JOB

E-Z
RADIATOR HANGER
For every tube-type radiator made there is an E-Z Hanger to fit it. All types in stock in principal cities. Quick shipments.
HEALY-RUFF CO.
770 Hampden Ave. St. Paul, Minn.
½" PIPE
Style R

FROST
PLUMBER'S QUALITY BRASS GOODS
A COMPLETE line. Lavatory and Sink Traps, Connected Waste and Overflows, Supply Pipes, Tank Trimmings, Vent Tees and Crosses, Slip Joint Nuts, Chain Stays, P. O. Plugs, Sink Plugs, Sink and Urinal Funnels, etc., Nickel and Chromium Plate. Packed in the well known orange colored box with a blue band.
THE FROST COMPANY
KENOSHA, WIS.
YOUR JOBBER STOCKS FROST PRODUCTS

FLOOR AND CEILING PLATES
FLOOR And CEILING PLATES
In the box with the
RED STRIPE
Order thru Your Wholesaler
THE BEATON & CORBIN MFG., CO.
Southington, Conn.
LOOK FOR THIS BOX AND TRADE MARK

MOHAWK SEPTIC TANKS
A Real Protective Covering
On Mohawk Septic Tanks is a real protective covering that is not painted on but HOT DIPPED. This means it will last longer and do its work 100% better.
MOHAWK SEPTIC TANK CO. SCHENECTADY, N.Y.

tilating Golf Association of Philadelphia, to be held at the Spring Haven Country Club, Wallingford, Pa.

**August 15, 1928.**—The annual outing of the Haverhill (Mass.) Master Plumbers' Association, to be held at Ferncroft Inn, Middleton, Mass.

**August 16, 1928.**—The annual family picnic of the Master Plumbers Association of the Oranges, Inc., to be held at Bertrand Island Park, Lake Hopatcong, N. J.

**August 16, 1928.**—The annual outing and clambake of the Master Plumbers' Association of New Bedford (Mass.) and Vicinity, Inc., to be held at Whitfield's Pavilion, Fort Phoenix, Fairhaven, Mass.

**August 16, 1928.**—Inter-association golf tournament of the Western Trade Golf Association and the Michigan Trade Golf Association, to be held at Battle Creek Country Club, Battle Creek, Mich.

**August 17 and 18, 1928.**—The 1928 outing of the Virginia Chapter, Association of Plumbing and Heating Salesmen, to be held at Virginia Beach.

**August 18, 1928.**—The outing of the Brooklyn Plumbing Supply Credit Association, to be held at Karatsonyi's Hotel, Glenwood Landing, with automobiles leaving Trommer's Restaurant, Brooklyn, at 9 a. m.

**August 18, 1928.**—The second annual outing of the Master Plumbers, Steamfitters and Sheet Metal Workers Association of Elizabeth, N. J. and Vicinity, to be held at the Staten Island Elks Club, Oakwood.

**August 18, 1928.**—The outing of the Ladies' Auxiliary of La Crosse, Wis., to be held at a place to be decided on later.

**August 22, 1928.**—The August golf meet of the Plumbing Contractors' Association of Chicago, to be held at Oak Hills Golf Club.

**August 22, 1928.**—The annual outing of the Tri-city Plumbing and Heating Trade Development League, to be held at Credit Island, Davenport, Iowa.

**August 23, 1928.**—The annual outing of the Association of Master Plumbers of the State of Maryland, to be held at Cottage Grove Park.

**August 23, 1928.**—The annual outing of the Master Plumbers Association of the City of Trenton, N. J., to be held at the Fair Grounds in that city.

**August 23, 1928.**—The August meet of the Metropolitan Trade Golf Association, to be held at the Braidburn Country Club, Madison, N. J.

**August 25, 1928.**—The twenty-first annual family outing of the Master Plumbers' Association, Inc., of North Hudson, N. J., to be held at Maywood Grove, Fairview, N. J.

**August 30, 1928.**—The annual stag outing of the Manhattan branch, Association of Master Plumbers of the City of New York, to be held at Colonial Inn on City Island.

**September 10, 1928.**—The September meet of the Heating Trades Golf Association of Massachusetts, to be held at the North Shore Golf and Tennis Club, Salem.

**September 12, 1928.**—The annual outing of the Bronx branch, Association of Master Plumbers of the City of New York, to be held at Colonial Inn, City Island.

**September 15, 1928.**—The annual outing of the Nassau County South Shore Association, to be held at Narragansett Inn, Lindenhurst, L. I., N. Y.

**September 19, 1928.**—The September meet of the Heating and Ventilating Golf Association of Philadelphia, to be held at the Green Valley Country Club in that city.

**September 21, 1928.**—Golf tournament of the Western Trade Golf Association, to be held at Glen Oak Country Club, Glen Ellyn, Ill.

**September 29, 1928.**—The annual outing of the Queensboro branch, Association of Master Plumbers of the City of New York, to be held at Narragansett Inn, L. I.

**September 29, 1928.**—The annual outing of the Newark Master Plumbers' Association, to be held at Oakland, N. J.

**October 8, 1928.**—The October meet of the Heating Trades Golf Association of Massachusetts, to be held at the Sandy Burr Club, Wayland, Mass.

**October 15, 1928.**—October meet of the Delaware Valley Trade Golf Association, at the Columbia Country Club, Washington, D. C.

**October 17, 1928.**—The October meet of the Heating and Ventilating Golf Association of Philadelphia, to be held at St. David's Country Club, Wayne, Pa.

**October 23, 1928.**—The October meet of the Metropolitan Trade Golf Association, to be held at the Wykagyl Country Club, New Rochelle, N. Y.

# THE TRADE

## NEWS FOR PLUMBING AND HEATING CONTRACTORS

### BUREAU TO MOVE TO CHICAGO OCT. 1

At a meeting of the executive committee of the Plumbing and Heating Industries Bureau, held in Philadelphia on July 23, it was voted to move the offices of the bureau to Chicago on October 1. This decision was taken after the board of directors had authorized the move by the first of the year, the executive committee selecting October 1 because that is the usual moving date.

It was also voted to make an appropriation sufficient to make a research into hand washing facilities in public schools. It is planned to make an intensive study of these facilities, with a view toward establishment of definite standards which master plumbers can suggest, and which civic bodies and municipal authorities can specify. The movement was inaugurated at the request of various civic organizations, which brought it to the bureau's attention.

Those present included J. W. Oliver, who presided, A. M. Maddock, Thomas F. Nolan, William J. Woolley, Jere Sheehan, Jr., who sat for Frank Lasette, W. K. Glen, who sat for H. W. Seymour, William Scudder, who sat for C. K. Foster, and Russell G. Creviston.

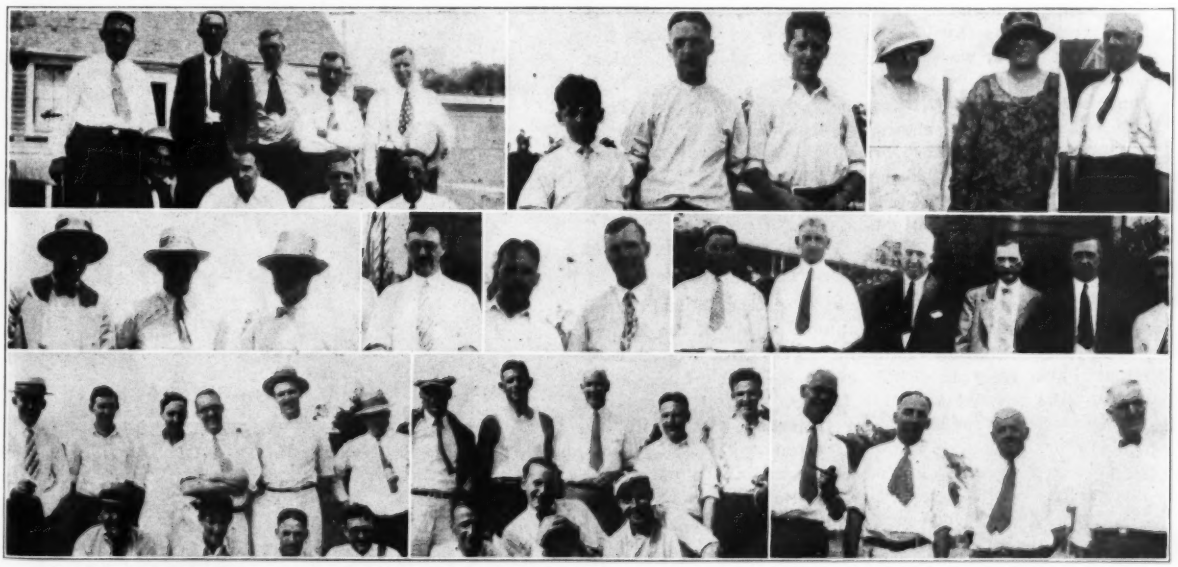
In addition, the advertising committee of the bureau met in Philadelphia on the following day, discussing present and future plans for the advertising campaign being conducted.

### NEWTON MASTER PLUMBERS HOLD OUTING

The Master Plumbers of Newton (Mass.) and vicinity held their yearly outing, Wednesday, July 25, at Workman's Circle Camp, Ashland, Mass. The members of the ladies' auxiliary joined hands with the master plumbers in their efforts to make this a most successful party. The party left Newton Centre at 9:30 a. m. and motored to Ashland. During the morning the sports for boys and girls were held, and at 1:30, 250 members and guests all sat down to a chicken dinner cooked and served in the old country style.

Following dinner, a ball game was played between the master plumbers and salesmen, the master plumbers winning the laurels. The ball teams consisted of: Master plumbers—P. Farrell, catcher; G. Kerr, pitcher and captain; J. Foster, first base; G. Kerr, Jr., second base; J. Burke, third base; C. Ogilvy, left field; F. Perkins, center field; J. Ahern, right field, and L. Hickman, shortstop. Salesmen—G. Williams, left field; J. Raftery, captain and center field; B. Weiner, pitcher; C. Ahern, second base; E. W. Poole, first base; F. H. Oaks, catcher; P. Callahan, right field; A. Papineau, shortstop; Philip Murphy, third base.

Prizes were distributed to winners of all events. In the ball game, Captain Kerr's nine men received a box of



**Top row, first picture: back, P. J. Walton, Boston Consolidated Gas Co., James Elliott, president, Joseph H. Young Co., Charles Sheehy of Crane Co., John Fostor of Newton and Henry Gallagher; front: J. Bench and George Hamilton, both of Monroe Co., Joseph Maloney of Newton and T. O'Brien of the Boston Consolidated Gas Co.: middle picture; Alfred Kerr, George Kerr and George Kerr, Jr.; Mrs. H. W. Thorndike of Boston and Mrs. W. H. Hockridge of Newton; C. M. Hewitt of Watertown.—Middle row: Joseph Clark of Needham, J. J. Burke and Walter Heagan, both of Newton; Fred E. Perkins of Newton; George Williams of Crane Co. and Charles Ogilvy of Wellesley; L. H. Lewis of Waltham, Harry McGourty of Newton, P. L. Murphy of the Standard Sanitary Mfg. Co.; J. J. Nagle of the Daly Plumbing Supply Co., Boston; J. G. Gillespie of Boston, state president; Leonard Hickman, president of the Newton association.—Bottom row: The winning master plumbers' baseball team, and the losing salesmen's team; H. W. Thorndike of F. W. Webb Mfg. Co., Boston, J. B. Davis of Newton, Joseph Maynard, president of Boston Brass Co. and John Ryan of Waltham**

cigars. The 25-yard race for boys and girls from 5 to 6 years was won by Jackie Hickman, and second prize by Elinor Burke. First prize was won by Robert Gallagher in the 25-yard race for boys 6 to 8 years, and George Hickman won second prize. The 25-yard race for girls 8 to 12 years was won by Alice McGourty, second prize by Margaret Gallagher, and third prize by Margaret Hickman. First prize was won by Robert Gallagher in the 25-yard race for boys 8 to 12 years; second prize went to Wilfred Walton, and third prize to Fred Hickman; Elmer Peck carried off fourth prize.

In the race for boys under 16 years, Charles Gallagher won first place; Alfred Kerr, Jr., second; Harry McGourty, Jr., third, and William Hickman, fourth. Margaret Gallagher won the 25-yard race for girls under 16 years, and Margaret Hickman won second prize. The ladies' 25-yard race was won by Miss M. Perkins; second prize was won by Mrs. John Raftery, and third prize by Mrs. John Burke. Throwing-the-ball-in-the-pail contest was won by Mrs. J. Davis, who received a jar of bath salts. For winning the first prize in the potato race, Mrs. Philip Murphy received a luncheon set.

The 100-yard race, free for all, was won by George Hamilton, who received a cigarette case, and A. T. Papineau received, as second prize, a leather bill fold. George Hamilton, with a record of 13 feet and 7 inches in the running broad jump, received three handkerchiefs. The standing broad jump was won by Charles Ogilvy, and he received shaving cream and lotion. A. T. Papineau received four handkerchiefs for second prize.

Charles Ogilvy also came in first in the high hurdles and received a cigarette lighter. George Kerr came in second and received a clasp pencil. The fat man's race was won by Philip Murphy, who received studs and links. Joseph Davis won second prize, and received as his gift an ash tray. The 50-yard backward running race was won by George Kerr, and he received 24 cans of soil and waste pipe cleaner. Joseph Davis received one-half gross of hack saw blades and a frame as second prize. Fred Perkins received, as third prize, 500 assorted cushions.

The tug of war was won by the master plumbers against the salesmen, the winners being Harry McGourty, J. J. Burke, George Kerr, William Farrell and E. Poole. They received a box of 25 cigars. The pipe race was won by J. Galvin, who received a briar pipe, A. G. Kerr receiving four handkerchiefs as second prize. The sack race was won by C. Ogilvy, and he received a necktie. Fred Perkins won second prize, which was a pack of playing cards.

## OMAHA TRADE TURNS OUT FOR PICNIC

Over two hundred of the trade in Omaha, Nebr., turned out Tuesday, July 24, for the annual outing of the Master Plumbers' Association of Omaha. The affair was held at Peony Park, and practically every member of the association was present with his family, as well as a large representation from the supply fraternity of the city.

The morning activities were devoted to a baseball game between members of the association and the supply men. Both sides claim a victory, but in spite of the doubt about the score, it was a good game from start to finish. In the afternoon various races and games were held, for which prizes were awarded the place winners. Practically the entire crowd took a swim before dinner was served, and afterwards dancing was enjoyed the remainder of the evening.

R. C. Merritt, chairman, E. A. Bahnke, Henry Kruger and Dan Whitney were the committee in charge of the affair, and Lucien L. Carr was in charge of the afternoon events. All deserve a great deal of credit for the manner in which the outing was planned and carried out.

## PLUMBING AND HEATING CLUB PLAYS AT CRYSTAL SPRINGS

The monthly golf tourneys of the Plumbing and Heating Club of San Francisco, formerly known as the California Sanitation Development League, are proving more and more popular in spite of the vacation period. The July tournament, held recently at Crystal Springs Golf and Country Club situated in the rolling hills back of Burlingame, attracted a record number of the club's golf section and their guests.

It's getting to be an old story—the announcement of Jackson Noble's gathering in low gross honors; and this occasion was no exception. Mr. Noble shot his usual consistent game, turning in a 79 card. Thomas C. Douglass, manager of the Heating and Piping Contractors' San Francisco Association, earned low net honors with a 62. There was a tie for the blind bogey prize, between J. C. Keene and Emile Heymans, which was decided in favor of Mr. Keene.

An added attraction of this tournament was the putting contest played off at the conclusion of the eighteen holes, in which every player took part. A tally of the putting scores showed a three-way tie between Frank J. Klimm, Robert Lees and J. V. Young, all having shot 37.

Walter Finch, the club's newly elected president, was unable to attend; in his stead Norman Farlow, director of tournaments and chairman of the golf section, presided at the banquet. In his informal talk Mr. Farlow said, in part, "Some measure of the value of these gatherings to those interested in the future of our industry may be gained by the presence here tonight of two club members —both non-golfers—who have come down expressly to gather with us at dinner. I am referring to Peter P. Schubert of the Walworth California Co. and James H. Pinkerton, one of San Francisco's pioneer plumbing contractors.

"In fact," the speaker concluded, "it wouldn't surprise

**Top picture: Frank J. Klimm, John C. Keene, William J. Goss and Harold L. Pierce. Middle picture: James H. Pinkerton, Harry Hoopes, Thomas F. Lenry, Robert Lees and Walter Mead. Bottom picture: F. J. Chittenden, C. C. Anderson, Thomas Douglass, Curtiss N. Gilley, Ross Clark and Jackson Noble. At the recent tournament of the Plumbing and Heating Club of San Francisco**

me very much to see Mr. Pinkerton in golf hose and plus fours one of these days. He covered the entire course with one of the foursomes today, and was curious to know the meaning of such words as 'par,' 'stymie,' and the like. No, gentlemen, it won't be long now." Mr. Pinkerton is one of the club's past presidents.

The scores were as follows:

| | G. | H. | Net | | G. | H. | Net |
|---|---|---|---|---|---|---|---|
| Allman | 90 | 21 | 69 | Lees | 89 | 21 | 68 |
| Chittenden | 116 | 35 | 81 | McCarthy | 91 | 24 | 67 |
| Clark | 101 | 27 | 74 | Mead | 103 | 28 | 75 |
| Douglass | 81 | 19 | 62 | Noble | 79 | 12 | 67 |
| Gilley | 98 | 24 | 74 | Pearce | 106 | 35 | 71 |
| Goss | 101 | 28 | 73 | Pierce | 106 | 35 | 71 |
| Heymans | 106 | 31 | 75 | Wilson | 94 | 19 | 75 |
| Keene | 93 | 25 | 68 | Young | 91 | 19 | 72 |
| Klimm | 94 | 16 | 78 | Hoopes | 113 | 35 | 78 |
| Leary | 99 | 24 | 75 | | | | |

## PROGRAM FOR THE TWENTY-THIRD ANNUAL MEETING OF THE A. S. S. E.

The official program for the twenty-third annual meeting of the American Society of Sanitary Engineering, which is to be held in Milwaukee, Wis., August 21 to 24, has just been issued and follows herewith:

**Tuesday Morning, August 21**

Call to Order, Geo. R. Stolz, chairman, Convention City Committee.

Invocation, Rev. Frank R. Dunkley.

Welcome, Daniel F. Hoan, mayor of Milwaukee.

Response, J. R. Walker, president of the society.

Appointment of Committees.

**Tuesday Afternoon**

Report of Officers: President, secretary, treasurer.

Report of Sub-Committee on Plumbing, Department of Commerce, William C. Groeniger, S. E., Columbus, Ohio.

Report of Research Committee, Wm. C. Groeniger, S. E. chairman.

Report of Membership Committee, A. R. McGonegal, chief plumbing inspector, Washington, D. C.

Report of Standardization Committee, by J. J. Crotty, S. E., New York.

**Wednesday, August 22**

Trip to Kohler, Wis., and tour of inspection through the Kohler plant with luncheon at the American Club at Kohler.

**Thursday Morning, August 23**

Address, Dr. John P. Koehler, commissioner of health, Milwaukee.

Cross Connections, Wm. C. Groeniger, S. E., Columbus, Ohio.

Cross Connection and Infection, T. J. Claffy, chief, Sanitary Bureau, Chicago.

Plumbing—What Will the Future Bring? A. R. McGonegal, chief inspector of plumbing, Washington, D. C.

Direct Flushing, T. R. Burke, manager, Technical Department, Sloan Valve Co., Chicago.

Bacteria Found in Waste Pipes from Laboratory Tests. L. A. Cornelius, president, Wolverine Brass Works, Grand Rapids, Mich.

The Calculations of House Sewer Sizes, A. E. Hansen, consulting hydraulic and sanitary engineer, New York City.

The Revival of Color in Plumbing Fixtures, Frank R. Fitzgeorge, plumbing inspector, Trenton, N. J.

Everdue Metal, C. B. Jacob, American Brass Co., Waterbury, Conn.

Chemical Closets, W. E. Foster, Peekskill, N. Y.

The Pennsylvania Code in Pittsburgh, Pa., Thomas G. English, plumbing inspector, Pittsburgh, Pa.

Standardization Program for Vitreous China Plumbing Fixtures, W. Keith McAfee, vice president, Universal Sanitary Mfg. Co., New Castle, Pa.

**Thursday Afternoon**

Address, Milwaukee Sewerage Plant, Robert Cramer, chief engineer, Sewerage Commission, Milwaukee.

3 p. m., trip to sewerage plant by boat.

**Thursday Evening**

8 p. m., banquet, Hotel Pfister.

**Friday Morning, August 24**

Report of Committees Auditing, Resolution, Convention City.

**Friday Afternoon**

Report of Board of Directors. Unfinished Business. Election of Officers. Adjournment.


**BLAKE-TESTITE SWIMMING POOL EQUIPMENT OF EVERY DESCRIPTION**

Plans furnished showing all piping, valves, fittings, etc.

Highest class of material and built for 100% efficiency.

Write for section No. 190 of our catalog, showing layouts, descriptions, illustrations of drainage equipment and full specifications.

Your jobber will supply you with any Blake Products.

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**Rock Island, Ill.**

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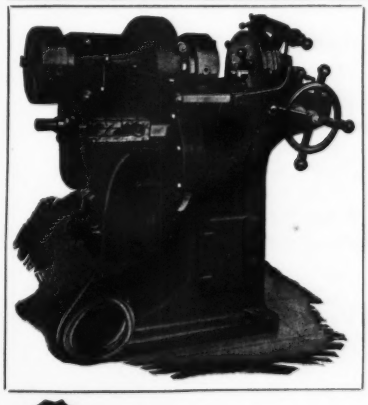

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**Power Pipe Threading Machine**

For Production and Precision Threading

**PORTABLE**

Capacity ¼" to 2" Pipe
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FEATURING:
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3. Three Speeds
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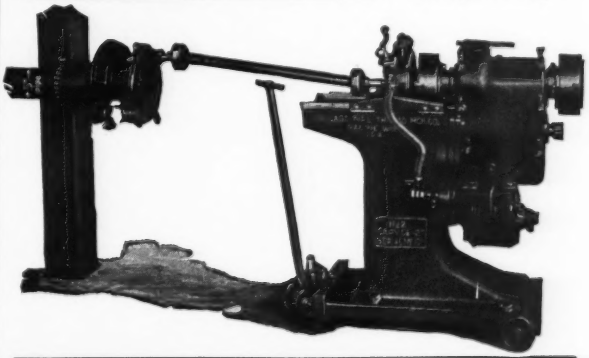


**CHICAGO PIPETHREAD MACHINE CO.**
Office and Factory: 1615 Racine St., RACINE, WIS. U. S. A.

**Watts Automatic Pressure Regulator**

**TYPE 23**

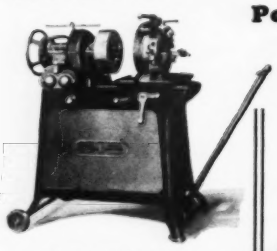
For domestic service to reduce high city or town water pressure thereby safeguarding plumbing fixtures—also for industrial services on air and water lines.

*SIMPLE*
*SAFE* *ACCURATE*
*FOOL-PROOF*
*PERMANENT*

Sizes ⅜" - 1¼"

**WATTS REGULATOR CO.**
LAWRENCE, MASS.

**THE**
**RED - E - HALL**
**Portable Pipe Threader**



*Can be rolled easily to any place on the job or in the shop.*

Everything you have wanted in a light, compact, portable pipe threader is yours in the Red - E - Hall. Ask for demonstration.

**HALL-WILL, Inc., Erie, Pa.**
*Pacific Coast Office:*
717 Calmar Ave. Oakland, Cal.

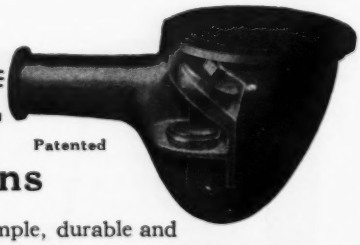
**Tank Fittings of Quality**

**1856 "McSHANE" 1928**

**The ORIGINAL Compound Lever Ball Cock. Elevated, Low-Down, Top and Bottom Supply Tank Levers and Valves.**

**McSHANE BELL FOUNDRY CO.**
**Baltimore, Maryland**

**SIGNET** Patented
**Floor Drains**



Clean, sanitary, simple, durable and efficient, the Signet Floor Drain meets every requirement of the service for which it was designed. The Signet trap keeps out all sewage, gas and germs.

**CRAMPTON-FARLEY BRASS CO., Kansas City, Mo.**

## TO HOLD ANNUAL OUTINGS

The annual outing of the Newark Master Plumbers Association will be held at Oakland, N. J., on September 29, it is announced by Secretary Ira H. Morris. The committee in charge includes Fred J. Engelberger, chairman; James N. Sheridan, Otto R. Groel, Joseph Miners, August Struening, Max J. Mayr, Walter A. Grub and Louis Rand.

The new entertainment committee, recently selected by the Manhattan branch, Association of Master Plumbers of the City of New York, has selected August 30 as the date of the association's annual stag outing, and has picked the Colonial Inn on City Island as the place. The committee is made up of Joseph R. Spellman, Richard Anderson, Emanuel Kalisch, Henry H. Berg, John J. Halloran, Andrew I. Green, Malcomb Walsh and Paul Bernstein.

The second annual outing of the Master Plumbers, Steam Fitters and Sheet Metal Workers Association of Elizabeth, N. J., and Vicinity, will be held at the Staten Island Elks Club, Oakwood, on Saturday, August 18, it is announced. Morris Esocoff is chairman of the entertainment committee which is handling the arrangements for the affair.

Announcement is made that the Association of Master Plumbers of the State of Maryland will hold its annual outing on August 23, at Cottage Grove Park. The committee in charge includes Charles Wachsmuth, chairman, William H. Mitchell, Herman Treff, Samuel E. Houck and August V. Eidman.

The annual outing of the Master Plumbers' Association of Montclair, Bloomfield, Verona and Vicinity (N. J.) will be held this year on August 15, at Idlewild Park, Little Falls, on the Passaic River. This is the park at which all of the outings of the association have been held, and is fully equipped with everything necessary for a successful picnic. Charles J. Samuel is chairman of the committee in charge of arrangements, and he will be assisted by David B. Van Sant, J. R. Blodgett, Louis Alt, Alexander McGregor and Henry J. Williamson.

The annual outing of the Master Plumbers' Association of Plainfield, N. J., and vicinity will be held Thursday, August 23, at a place not yet selected.

The Haverhill (Mass.) Master Plumbers' Association will hold its annual outing at Ferncroft Inn, Middleton, Mass., the date selected for the event being Wednesday, August 15. C. Anderson, A. Dugdale and R. Walmsley are member of the committee for the affair.

The twenty-first annual family outing and games of the Master Plumbers' Association, Inc., of North Hudson, N. J., has been set for Saturday, August 25, the place being Maywood Grove, Fairview, N. J. Alex Thane is chairman of the committee in charge.

## MANHATTAN DIVISION ELECTS BOARD

The board of directors for Division No. 1 of the Manhattan branch, Association of Master Plumbers of the City of New York, has been selected, William Wallis being named chairman. Joseph Heck is vice chairman, and the other members are Thomas Connelley, Jacob Jarcho and W. H. Campbell.

Following the election, the members of the boards of both divisions elected the following association officers, the members okeying the selection: Chairman, Thomas J. Dorsey; vice chairman, Joseph F. Heck; secretary, Albert A. Duguid; treasurer, Thomas J. Cummins; sergeant-at-arms, John Reiff.

The board of directors for the parent body consists of Mr. Dorsey, Mr. Wallis, Mr. Heck, Mr. Jarcho, Mr. Connelley, Mr. Duguid, William J. O'Hare and Nathan Weinstein.

**Exhibits of the National Radiator Corp., Pierce, Butler & Pierce Mfg. Co., and Hajoca Corp., at the Home Comfort Exposition in Richmond, Va.**

# Results Show Success of Exposition

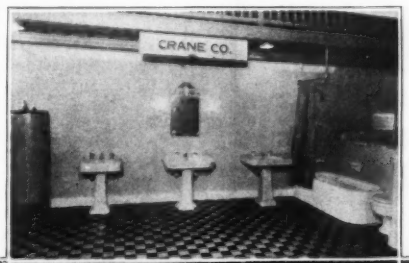
**Officers of the Richmond Association.—R. C. Beverley, vice president; E. G. Harris, president; B. Y. Kinzie, executive secretary**

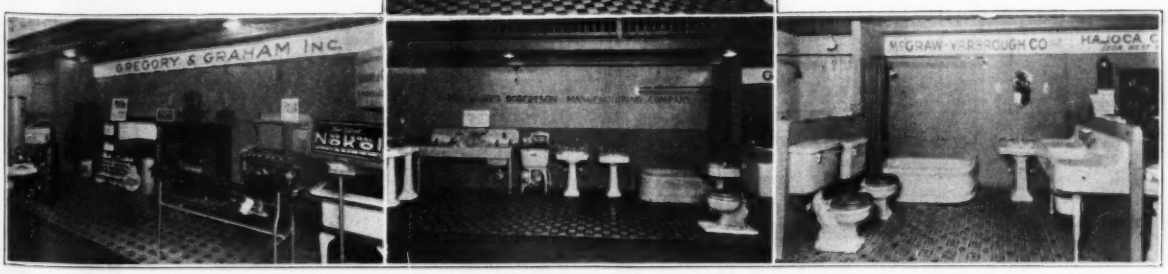
THE test of any advertising campaign, or the test of any sales plan, is in the results obtained. When judged from a standpoint of results, the officers and members of the Master Plumbers and Heating Association of Richmond, Va., believe that their Home Comfort Exposition, held during May and June, was an outstanding success. Originally planned for but three weeks in May, the results were so pleasing that the association and the exhibitors decided to extend the exposition for an additional four weeks.

One of the outstanding facts brought to the attention of the trade through the exposition was the general belief on the part of the consuming public that the cost of plumbing and heating equipment is prohibitive. Visitor after visitor expressed surprise at the low retail price with which every article on display was tagged. It demonstrated quite clearly that the plumbing and heating industries have a definite work to perform in educating the public to the low cost of the equipment which they sell and install.

The association decided that the problem was to secure interested prospects rather than a large number of visitors, so that all free prizes were eliminated and carefully prepared direct mail and newspaper advertising was used. As a result, the attendance for the first three weeks was fifteen hundred a week, a total of 4,500. From this attendance the members of the association who were on floor duty obtained approximately 384 live prospects for plumbing and heating equipment. While many of these have not been turned into definite sales as yet, sufficient volume of business has been reported by the members to prove that the exposition was a financial success.

Many members reported business running into thousands of dollars, others reported the exposition a failure. An analysis indicated that those who mailed out the invitations supplied to all the customers on their books, and who were on the floor to greet their customers, were the ones who got the business. Those who did nothing, or who simply mailed the invitations, did not gain business. It was a simple demonstration that, as in all other forms of association activity, the man who gets the most out is usually the man who puts the most in. The manufacturers and wholesalers who had displays




**Exhibits at the Home Comfort Exposition in Richmond, Va. Above: Exhibit of Crane Co. Below: Displays of Gregory & Graham, Inc., James Robertson Mfg. Co., and McGraw-Yarbrough Co.**

exerted every effort to present their products attractively. As a result, some excellent publicity was obtained in the local newspapers in addition to the good will created in the minds of those who visited the exposition.

There are several features in connection with the exposition which are interesting to any other association which may be contemplating a similar project. First, the invitation issued was for a "Bath Tub Party." Richmond is a very conservative Southern city and, while the invitation caused considerable comment, it did not bring the attendance we had a right to expect. Second, continuing the exposition for an additional four weeks was an anticlimax. While the attendance and prospects were worth what they cost, the high interest of the first three weeks was not sustained. Many of the exhibitors and members neglected their floor days and failed to send out the second invitation provided, so that the weekly attendance was less than half that of the first three weeks. However, those members who did send out invitations and took their regular floor days continued to secure valuable business as a result. However, it was apparent that, after the novelty had worn off, many of the members were not enthusiastic about spending eleven hours on the floor.

Unlike other displays, which can be run off in a week, the average man or woman who is interested in plumbing and heating equipment does not want to be crowded or hurried in looking at a display. Those who observed the entire exposition are convinced that the high percentage of prospects obtained was a direct result of the method of personally conducting each visitor through the exposition. This method gave leads regarding requirements which would probably never have been obtained otherwise. The use of the telephone in following up invitations to architects, builders, realtors and city officials was a great aid in increasing attendance. Naturally the display of colored fixtures brought the greatest comment from the visitors and several colored replacement jobs were sold as a result. Perhaps it was because of timeliness, but the greatest number of sales resulting, as far as can be judged from the reports received, were of automatic hot water heaters. Many prospects for oil burners were obtained by exhibitors, but so far they have been slow in securing the signature of any great number on the dotted line.

Perhaps the greatest result from an association standpoint, was the better understanding which resulted from the members and supply men working together for business on the same floor. It was one of the rules of the exposition that all prospects should be turned over to their own plumbing and heating contractor if a member of the association. As a result, it was quite usual to hear a member of the association using his greatest persuasion to sell a job for another member. Naturally, under such conditions it was impossible to knock a competitor or his goods. This co-operation in helping a fellow member to get a job is still apparent and is resulting in a much better spirit in the trade than has ever existed before. In fact, it has extended further, as, in some cases, non-members were assisted to sell replacements when it was established by conversation from the prospect that he was the regular plumber. Of course this has raised the association in the eyes of non-members and should result in an increase in membership.

The following wholesalers and manufacturers aided in the success of the exposition: American Radiator Co.; R. C. Beverley Heating Co.; C. F. Church Mfg. Co.; Crane Co.; EverHot Heater Sales Co.; Everite Pump & Mfg. Co.; W. F. Gerhardt, distributor Electrolux Gas Refrigerator; Gregory & Graham, Inc.; Hajoca Corp.; Hoffman Specialty Co.; Kohler Co.; McGraw-Yarbrough Co.; Thos. Maddock's Sons Co.; National Radiator Co.; Pierce, But-


NO SALES PROBLEM

RATHBUN MODEL "S"

NO YEARLY MODELS BUT ALWAYS AHEAD

There's no sales problem for the Rathbun Sump Pump Dealer. Every drainage problem efficiently solved is our promise.

*Ask your jobber.*

PIONEER MANUFACTURERS OF VERTICAL PORTABLE ELECTRIC PUMPS.

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*Check These Points*

When you buy brass goods remember there are four important points for you to check before you make a selection. If you buy Enterprise Brass Goods, these four points are certain to be there:

1. Careful design for easy installation.
2. Highest quality brass for longest service.
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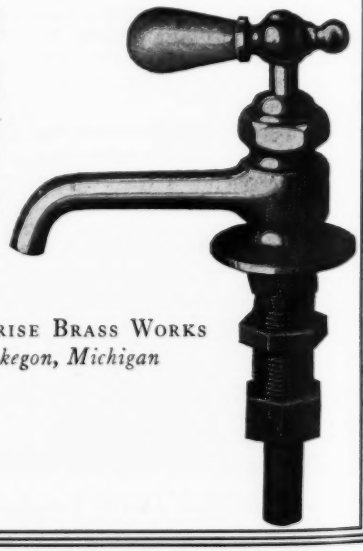

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*Muskegon, Michigan*

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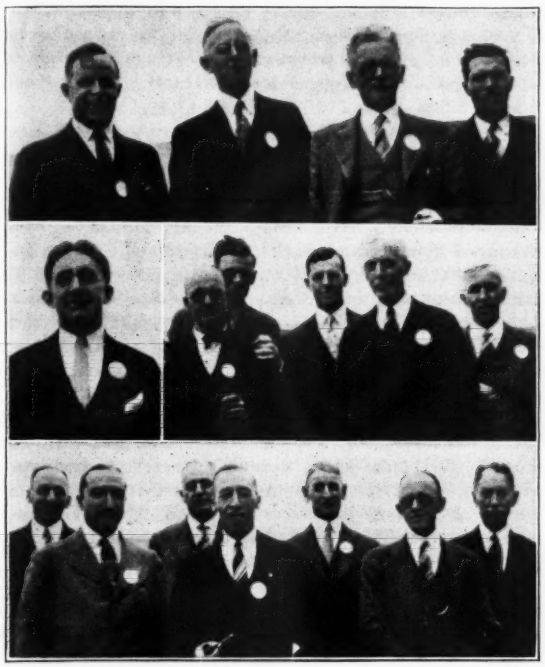

**Top picture: Thomas P. Sullivan, Fred Dahlborg, J. J. Callahan and D. Vega, all of Brockton. Middle picture, at left, Joseph F. Murphy of New Bedford. Back row: T. C. Colter of Homer C. Perkins Co.; Ralph C. Merrow and Charles F. Griffin, both of Peabody. Front: G. R. Woodbury of Peabody, C. F. Ostberg of Worcester.—Bottom picture: Part of Newton delegation.—Photos taken at the recent convention of the Massachusetts State Association of Master Plumbers**

ler & Pierce Mfg. Corp.; Royal Brass Co.; Speakman Co.; Jas. Robertson Mfg. Co.; Tomlinson Co.; Jos. A. Vogel Co.

The exposition demonstrated that there was business waiting for solicitation, it stimulated many members to get out and sell who had never done any real selling before and it increased business for all of those who put in the necessary effort. It was a success both in sales and in better understanding. From this experience the officers and members of the Master Plumbers and Heating Association of Richmond believe that there should be a permanent co-operative display room located in the heart of the retail section of the city, where plumbing and heating equipment could be presented to the home owners of the city amid better surroundings and on a larger scale than is done at present by any manufacturer, wholesaler or member. Such a showroom would pay for itself in increased sales and serve as the educational center of the trade in sales and advertising methods which would bring increased business to every section of the plumbing and heating industries.

However, from the progress made through the Home Comfort Exposition, the members of the trade in Richmond believe the day is fast approaching when all branches and members of the industries will present a united front in their campaign for the share of the home owners' dollar to which they are justly entitled by the comfort, convenience and sanitation which they supply.

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Ladies who attended the recent convention of the National Association of Master Plumbers in Memphis, Tenn., have received a silver plate as a souvenir of the occasion from the office of Thomas F. Nolan, Albany, N. Y., past president of the association. The plate is suitably engraved to commemorate their attendance at Memphis.

Oil-Burner manufacturers throughout the country report a continuous increase in their sales volume, which only reiterates the fact that the use of oil for heating purposes is becoming more and more popular. To burn oil with the most efficiency and economy requires a boiler built specifically for the purpose.

There is an ever increasing trend, today, toward modernized household appliances. Here is an avenue which many dealers are using to increase their annual income. Every Oil-Burner user is a live prospect for a Bryan Boiler (the only boiler on the market, built specifically for use with oil or gas), and can be easily convinced that Bryan Boiler offers the utmost in efficiency, economy, cleanliness, appearance and ease of operation. What more could be desired in a merchandising proposition?

*Write us today for complete information.*

**Bryan Steam Corp.**
Peru, Indiana

### INDIANA TO STAGE MEMBERSHIP DRIVE

With the purpose of adding 100 new members during September, Victor L. Peavy, field manager of the Indiana Society of Sanitary Engineers, will institute a membership campaign immediately upon his arrival to take up his duties in that state September 1. As a preparation for this campaign, the district boards and chairmen have been asked to make preparations and contacts during the period preceding the opening of the drive.

To start the campaign, a meeting is called for Saturday, Sept. 1, at Indianapolis, for all state officers and directors, district chairmen and local presidents and secretaries. The purpose of this meeting is to complete final plans for the membership drive and to get an idea of the conditions in all of the various localities where the association is represented.

The campaign for September will be opened in each district by a meeting of the whole territory on the first night on which Mr. Peavy will be in that district. A proposed schedule of his itinerary for September is as follows: Sept. 1, state conference, Indianapolis; Sept. 3 and 4, District No. 1; Sept. 5, 6 and 7, District No. 3; Sept. 8, 10 and 11, District No. 5; Sept. 12 and 13, District No. 4; Sept. 14 and 15, District No. 6; Sept. 17, District No. 7; Sept. 18 and 19, District No. 2; Sept. 20 and 21, District No. 8; Sept. 22 and 24, District No. 9; Sept. 25 and 26, District No. 10; Sept. 27 and 28, District No. 11; Sept. 29, District No. 12.

The membership drive will be conducted by 50 teams selected from the membership. These teams will work the entire state in a contest to see which can procure the greatest number of members. This is a method which has been worked very successfully under Mr. Peavy's direction in Wisconsin, and by carefully following out his directions and suggestions, Indiana hopes to duplicate the results achieved there.

### WEST HUDSON MASTERS HOLD OUTING

The Master Plumbers' Association of West Hudson, N. J., held its annual outing at Connor's Cedar Grove Hotel, Waterwitch, N. J., on Saturday, July 14. About a hundred masters and their friends left the Town Hall, Kearny at 10 a. m. for the drive to Waterwitch. The outing committee, composed of Louis Saporito, Howard Bond, Joseph Roujon and Joseph Emery, had spent many evenings with the almanac to pick a clear day, but evidently were without success because of the amount of rain which fell all day.

President George Geissler was on hand at the hotel to welcome everyone and see that they were properly taken care of. A typical shore dinner was served, during the course of which professional talent entertained. James Lindsay, a master plumber, sang as did Thomas Branch, another master plumber, and William Krueger, of Burnham Boiler Corp., acted as master of ceremonies.

For twenty minutes, during which the sun shone, a baseball game was organized, in which the plumbers trounced the salesmen 13 to 12, the winning team receiving automatic pencils as prizes. Louis Saporito won the door contest and received a desk fountain pen set. Bathing and fishing were enjoyed by a great many of those attending.

# Hold Short Course in Texas

THE first short course for master and journeyman plumbers and steamfitters which was held at the Agricultural and Mechanical College of Texas, College Station, Tex., July 18, 19 and 20, was highly successful from every angle. Not only were a number of able speakers included on the program, but the attendance was particularly good for an initial meeting.

The well arranged program was divided into three parts. The first part was confined to subjects of a technical nature intended to increase the efficiency of the operator. The second part of the program covered general subjects of value and interest to any business man, and the third division related to exhibits maintained by a number of manufacturers of plumbing and heating commodities.

Professor S. E. Dibble of Carnegie Institute of Technology, Pittsburgh, Pa., explained in detail, as a part of the first section of the program, the underlying principles upon which plumbing installations should be based. Dr. F. E. Giesecke, director of the engineering experiment station, Agricultural and Mechanical College of Texas, explained with the aid of laboratory demonstrations methods of designing water supply installations and water heating systems and ways of determining the friction of water in pipes and fittings. Those attending the conference took an active part in the laboratory demonstrations.

V. M. Ehlers, state sanitary engineer, presented an outline for a state plumbing code. A. L. McClurg, who also addressed the meeting, talked at some length on the installation of steam heating systems. Later in the meeting Mr. McClurg also talked on salesmanship as applied to the plumbing and heating industry. E. Gregis of the Linde Air Products Co., New York City, explained in detail the advantages to be gained by welding pipes on plumbing and heating installations.

**Top row: T. E. Gossett, Professor E. W. Steel, A. L. McClurg, F. R. Juergens, Dr. F. E. Giesecke, B. E. Howell, B. Dimock, C. D. Hughes and J. Blasienz. Bottom row: V. M. Ehlers, C. E. Greer, E. J. Evans, W. R. Stewart, D. S. Hill, Professor S. E. Dibble, F. W. Wells and B. W. Hartigan. Photo taken at Texas A. & M. short course**

The second part of the program called for an address by Dr. J. C. Anderson, Texas state health officer, who told of the work that his organization is doing and explained the responsibilities of the master plumber in helping to preserve the public health. Professor Dibble also addressed the meeting on methods of estimating the cost of plumbing and heating installations.

Among the manufacturers who exhibited their products at the meeting were: American Radiator Co., New York City; Crane Co., Chicago; Johns-Manville Corp., New York City; Standard Sanitary Mfg. Co., Pittsburgh, Pa., and the Pipe Bending Process Co. Representatives of the various exhibitors were in attendance to explain the products on display.

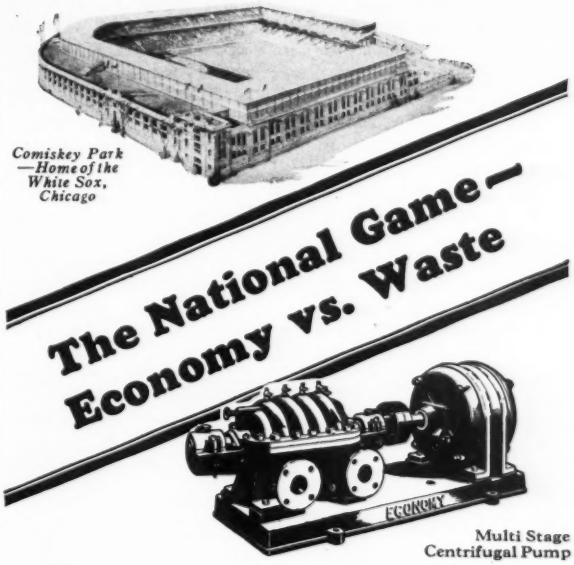
## RAIN DAMPENS CHICAGO N. & N. W. PLUMBERS' PICNIC

The annual basket picnic of the Chicago North and Northwest Master Plumbers' Pleasure Club was held on July 18, at Viani's Grove, Park Ridge, Ill. Beautiful weather prevailed just prior to the various athletic events scheduled and quite a large crowd of master plumbers, their wives and families and representatives of the supply fraternity had gathered, but there was a cloud-burst at the end of the first inning of the ball game between plumbers and salesmen and the rest of the afternoon was spent in the dancing pavilion. Here there was shelter from the rain and music for entertainment, so the crowd made a dance of the picnic. The salesmen were leading 3 to 1 in the ball game, but, of course, the score does not stand in a called-off game.

Toward early evening the skies cleared, and the committee was able to run off the races. Races for the children of various ages preceded those for the master plumbers, master plumbers' wives, salesmen and salesmen's wives. In the race for master plumbers' wives, Mrs. George Swift was first and Mrs. L. P. Markowski second. Mrs. M. M. Wagner won the race for salesmen's wives, with Mrs. A. Geffe second.

Martin Sauser, president of the club, won the race for master plumbers under 40, closely followed by A. G. Peterson. First across the line in the event for master plumbers over 40 was George H. Matthews, and he was

**Top row: Mrs. George H. Matthews and George Matthews, Jr.; Richard Finn, Alvin Bahn, Henry Breyer.—Middle row: Mrs. and Mr. John Blair.—Bottom row: C. R. Boulter, National Plumbing & Heating Supply Co.; C. E. Johnson, Inland Supply Co.; A. J. Carey, Kellogg-Mackay Co.; L. S. Combs, Kellogg-Mackay Co.; William Wagner and William Ziegler**


IN THE big ball parks, expenses have to be weighed carefully against gate receipts if the national pastime is to be a paying proposition. Any equipment purchased by big league clubs for maintenance must prove its ability to cut costs.

At Comiskey Park, Chicago, ECONOMY Pumps provide economical high pressure needed for clearing stands of pop bottles and other rubbish, and perform heavy duty in the clubhouse. City pressure is increased 150 pounds, variable speed control for low and high pressure is provided, and power bills are kept at a minimum through Economy's efficient operation. It has been found to be a never-failing source of pressure.

Wherever dependable, low-cost pressure is needed—for water power, heat, sewage ejection or some other purpose—there is an Economy Pump to do the job as it should be done. Write for bulletin on type that fits your needs, or talk your problem over with our local representative.

**Economy Pumping Machinery Company**
**3431 West 48th Place, Chicago**
Representatives in Principal Cities—Telephone and address under Economy Pumping Machinery Co.

**Economy Pumps**

pressed by John Blair. The salesmen under 40 were led by H. J. Fox, of the Standard Sanitary Mfg. Co., with W. Mullany, of the Triad Products Co., second. L. J. Kemps, of the Triad Products Co., was first in the race for salesmen over 40, with H. P. Larson, Weil-McLain Co., second.

Mrs. L. Wagner showed the way in the stout ladies' peanut race, with Mrs. L. P. Markowski second. In the single men's race, R. Clark was first and E. C. Hathaway second. Fred Wagner won the married men's race, with L. P. Markowski second. The salesmen won the relay race.

Prizes for these various events were, in the main, cash, with vanity cases and towels taking the place of cash in some of the women's events.

Everyone had a good time in spite of the rain. The basket lunches and dinners were comfortably eaten, the dance was enjoyed and old friends got together. Much credit is due, therefore, to the committee in charge, which was headed by E. J. Benning and consisted of E. J. Sanger, F. E. Pearson, Harold Stift, George Matthews and William Redieske.

**Top (left to right): Mrs. William Merriman, Mrs. Hanson, Mrs. M. A. Nelson, E. C. Wagner, Mrs. H. Veitz, Mrs. C. A. Burmeister, A. G. Peterson.—Bottom row (left to right): H. Veitz, William Merriman, W. J. Blyth, C. A. Burmeister, M. A. Nelson and Martin A. Sauser, president of club**

## INDIANAPOLIS MASTERS RE-ELECT FRANK IRISH

Frank E. Irish was re-elected president of the Indianapolis (Ind.) Merchant Plumbers' Association at a recent meeting of that organization. Roland M. Cotton was elected vice president and Elmer Wiebke, recording secretary. James A. Diggle was re-elected treasurer, and G. T. Thomas was made executive secretary again.

## ORANGE BELT MASTERS HEAR BUREAU REPRESENTATIVE

George Wilson, representative of the accounting department of the Plumbing and Heating Industries' Bureau, completed his tour of Southern California by attending the regular meeting of the Orange Belt Master Plumbers Association, held Wednesday evening, July 11, at the Hotel Anderson, Colton, Calif. Inasmuch as Mr. Wilson's presence had been broadcast by the secretary of the association, almost the full membership was in attendance. Mr. Wilson was introduced by John R. Denning, manager of the Los Angeles office of the bureau, and spoke regarding the essential nature of a plumber's accounting system as a means to the end that his business should be conducted properly and profitably.

He was followed by Mr. Denning, who recounted the activities of the bureau in attempting to improve the conditions in merchandising for master plumbers. The meeting was attended by past State President C. R. Hutton, Lawrence Stuffler and State Secretary Bruce Clark.


# A MASTERPIECE IN RICH DESIGN

THIS swing spout sink fixture is a conspicuous example of Central beauty in line and color. The black vitreous china soap dish and handles are in splendid harmony with the rich nickel or Central Crome plated body and spout.

The body is a single casting, the spout has the anti-splash device, the soap dish is self-draining.

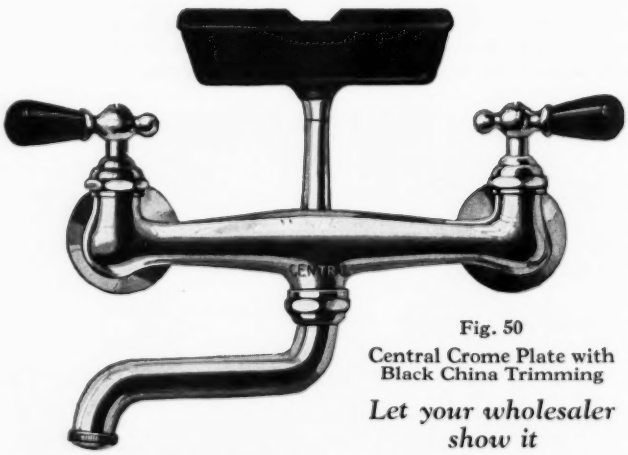


Fig. 50
Central Crome Plate with Black China Trimming

*Let your wholesaler show it*

The CENTRAL BRASS MFG. CO.
CLEVELAND, OHIO.

# Woman's Page

*Letters come in regularly from many of the women's auxiliaries and it is always a pleasure to hear of the work and play of these organizations. This is playtime for most clubs and societies, and many of the secretaries write me about the good times which are planned to take the place of regular meetings during the summer months. But some of the auxiliaries are still keeping up the usual meetings. And the many readers of this page want to learn of what all the auxiliaries are doing. So be sure and tell them through our columns.*

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**Dayton Auxiliary Elects New Officers**

The Women's Auxiliary to the Master Plumbers' Association of Dayton, Ohio, recently elected the following officers for the coming year: Mrs. Edward Loewer, president; Mrs. A. J. Hoke, secretary; Mrs. George Riber, treasurer; Mrs. Joseph C. Keim, chairman of publicity.

**Kalamazoo, Mich. Auxiliary Holds Outing**

The Kalamazoo, Mich., auxiliary held a most enjoyable outing on July 18 at which there were about thirty or forty present. There were games and a weenie roast held at 6:30 p. m. This was the second outing of its kind given the master plumbers and the kiddies and the auxiliary has promised to make it an annual event. This auxiliary is just in its infancy, there being only eight members, but they have accomplished a great deal together.

**Picnic Held in Springfield, Mo.**

Members of the auxiliary and the master plumbers of Springfield, Mo., with their families, held a picnic on Monday, July 16. Those present were Mr. and Mrs. C. D. Dunlap, Mr. and Mrs. C. E. Cook, Mrs. H. Schuerer, Mary Ellen Schuerer, Mr. and Mrs. J. E. Healey, Mrs. Blanche Hiatt, George Wood, Gladys Cook, secretary of the auxiliary, Delmar Morris, J. D. Manley, Miss Edgar, Mr. and Mrs. W. Mensendick, Mrs. Margaret Hefferman and Mrs. Phil Donnelly of Lebanon.

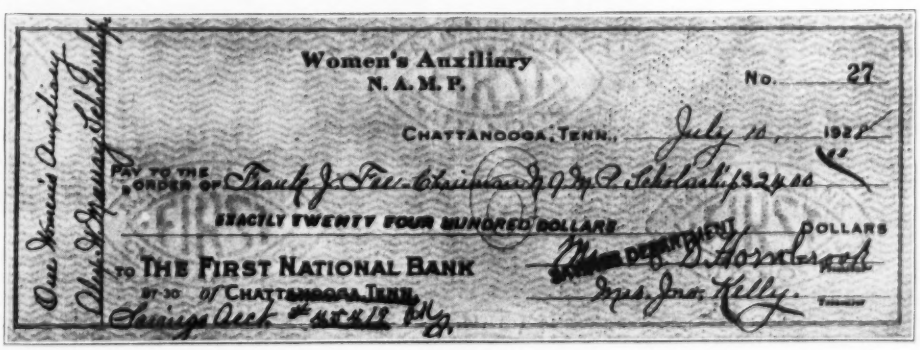
**Denver Auxiliary Entertained at Luncheon**

The Ladies' Auxiliary to the Master Plumbers' Association of Denver, Colo., was entertained July 19 at a delightful luncheon at the Denver Tea Room. Mrs. John and Mrs. William Hensler acted as hostesses. A most interesting report of the national convention was read by Mrs. Edwin B. Clayton, who was the delegate of the Denver auxiliary. After the business meeting, whist was played, and prizes were won by Mesdames Bordeau, Demmer, and Cullyford. An evening picnic was planned to be

**Mrs. Guy Stocking, vice president of Denver auxiliary; Mrs. R. A. Hurley, Mrs. R. Demmer, Mrs. Frank Bordeau, president; Mrs. E. B. Clayton, corresponding secretary.—Photos taken at the recent convention of the Colorado Sanitary and Heating Engineers**

# Contribute to Scholarship Fund

MRS. E. D. HORNBROOK of Kansas City, Mo., president of the Women's Auxiliary to the National Association of Master Plumbers, recently sent a check for $2,400 to Frank J. Fee of New York City, chairman of the scholarship committee of the association. The check, which is reproduced herewith, is for the Alex Murray scholarship, in honor of one of the charter members of the association who is still living. Readers will recall the previous contributions made by the auxiliary for advancing the scholarship work.


Women's Auxiliary
N. A. M. P.
No. 27
Chattanooga, Tenn., July 10, 1928
Pay to the order of Frank J. Fee Chairman Sch. Dept. Scholarship $2400.00
Exactly Twenty Four Hundred Dollars
Dollars
To The First National Bank
of Chattanooga, Tenn.
Savings Acct #
Mrs. D. D. Hornbrook
Mrs. Jno. Kelly.
One Dime Auxiliary
Mrs. D. Hornbrook Pres.

PEERLESS B&K DUPLEX P·D·Q·C

**LET'S GO ALL THE WAY**

There are four distinct steps in the development of special tools for cutting threads.

**First—The Hand Stock**
**Second—The Power Drive**
**Third—The Light Power Machine**
**Fourth—The Heavy Power Machine**

All of these are good and have a place in industry.

Your particular attention is called to the efficiency and long life of BIGNALL & KEELER MACHINES. They are the result of more than fifty years of practical experience and progress. Thousands have profited by consulting Pipe Threading Machine Headquarters. Will you be next?

**BIGNALL & KEELER MACHINE WORKS**
of the N. O. Nelson Mfg. Co.
EDWARDSVILLE, ILLINOIS

PEERLESS B&K DUPLEX P·D·Q·C PEERLESS B&K DUPLEX P·D·Q·C

**Patterson**
**Hot Water Heaters**

*Supply Hot Water*
*1-10 Mile High*

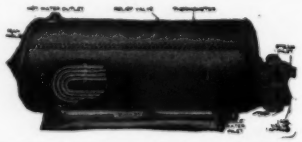
In the 42-story Ritz Tower—the tallest apartment hotel in the world—Patterson Hot Water Heaters are called upon to furnish hot water nearly 500 feet up in the air.

No service is too severe for the Patterson. We guarantee Patterson Hot Water Heaters to furnish all the hot water required, as hot as required and when required.

*Catalog sent on request.*

*Ritz Tower, New York*
*Emery Roth, Architect*
*J. L. Murphy Co., Inc., Plumbing Contractors*

**The PATTERSON-KELLEY CO.**
106 East 40th Street
New York City



held August 2, for members of the auxiliary and their families.

**Moline-Rock Island Auxiliary Holds Meeting**

The women's auxiliary to the Master Plumbers' Association of Moline and Rock Island, Ill., held its July meeting at the home of Mrs. Albert Rosenfield, 1919 Twenty-ninth street. A short business session was held and the hostess served refreshments. The next meeting will be held on August 13, with Mrs. Hugo Stange, 1200 Thirty-third avenue, Moline, acting as hostess.

**La Crosse Auxiliary Plans Outing**

The Ladies' Auxiliary of La Crosse, Wis., held a meeting on July 20 with the master plumbers in their hall. In the absence of the president, the meeting was called to order by the vice president, Mrs. Frank Branson. It was decided to hold an outing on August 18. After the business meeting, refreshments were served by Mrs. John Hengel and Mrs. P. J. Iverson. Later in the evening five hundred was played, honors going to Mrs. George Knudsen, Henry Niebuhr, Nicholas Hengel and Mr. Whilke.

## *New Business Ventures*

**Fairfield, Ill.**—H. L. Fox and W. D. Booth, both of West Frankfort, have opened a plumbing and heating business in the Sibley building on Main street. The business is to be known as the Fairfield Plumbing & Heating Co.

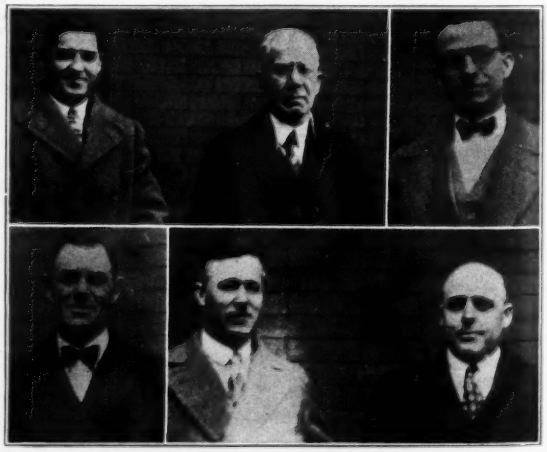
**Brooklyn, N. Y.**—L. M. Owens and associates have organized and incorporated the Owens Heating Corp., with a capital of $25,000. It is planned to establish a heating business in South Brooklyn.

**Winslow, Ind.**—The Winslow Plumbing & Heating Co. has been incorporated to carry on a plumbing and heating business. The incorporators are Samuel F. Heacock, Harriett Heacock and Harley O. Heacock.

**Lakeview, Ore.**—G. S. Devore has engaged in the plumbing and heating business under the name of the Lakeview Plumbing Shop.

**Elmhurst, Ill.**—Edward E. Kahn, Clarence Reichold and Lilli A. Butts are the incorporators of the new Elmhurst Plumbing & Heating Co. on East Park avenue.

**Marshall, Mo.**—The Marshall Plumbing & Heating Co. is a new firm that has been located in the Potter building,



**Top row: R. E. Krimlofski and R. W. Bixby, president and vice president, respectively, of Omaha association; Dudley Hamilton of Omaha. Bottom row: Emil Rohlf of Lincoln; Howard McCrny of Albion and John Martig of Omaha, both past state presidents. Photos taken at the recent convention of the Nebraska Retail Plumbers' Association**

268 West North street. E. C. Cornett, who has been with the Naylor Hardware Co. for nine years, will have charge of the heating and tinwork, and William H. Neff and G. W. Thomas will attend to the plumbing. Neff and Thomas have been in the plumbing business at 552 West Boyd street for some time.

**Jamaica, L. I., N. Y.**—Thomas J. Smith & Son have established a modern plumbing and heating engineering business at the corner of Jamaica avenue and One Hundred Forty-second street.

**Brooklyn, N. Y.**—The Star Plumbing & Heating Co. has been established at 75 Hinsdale street by Isidor Weiner

**Officers of Associated Master Plumbers of Alabama for 1928-1929: Chris. Bailey of Montgomery, secretary-treasurer; S. E. Scholze of Birmingham, president; Lee Dulion of Birmingham, vice president.—Photos taken at the recent state convention**

of 3816 Sixteenth avenue. Mr. Weiner is sole proprietor of the firm, the name being one assumed for the purpose of transacting a general plumbing, heating and ventilating engineering business.

**Yonkers, N. Y.**—The Greenco Plumbing and Heating Co. has been organized and incorporated by W. F. Gilmartin and associates to establish and operate a plumbing and heating engineering business.

## *Business Changes*

**Salida, Colo.**—S. A. Russell has sold his interest in Russell & Norris, plumbing contractors, to his former partner, Drew Norris, and will take up residence in Alpene, Tex. Mr. Norris will continue to operate the business.

**Memphis, Tenn.**—The State Heating & Power Co. has moved from 685 Linden avenue into new quarters at 272 Walnut street.

**Washington, Ill.**—John Bidwell has moved his plumbing and heating business to 212 South Marion avenue. T. G. Arthur, who has conducted a plumbing business on that street for many years, has gone into business with him.

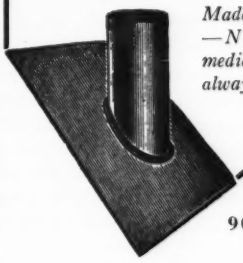
**Silverton, Ore.**—Leonard R. Incledon has sold his plumbing and heating business at 622 North Water street, to James Johnson.

**Memphis, Tenn.**—The McGown Plumbing Co. is now located at 542 Vance avenue, having moved from its location on Third and Adams streets.

**Cambridge, Ill.**—Clel Baugh of Farmington has purchased an interest in the plumbing firm of George Baugh & Son, and has given up his plumbing business in Farmington.

**Royersford, Pa.**—William P. Brown and LeRoy Boyer have dissolved the partnership of the plumbing and heating business known as Brown and Royer. Mr. Brown has been conducting the business.

Making a Raymond Lead Roof Flange installation is just as easy as it is possible to be — they're made for easy installation.



*Made from drawn lead —NOT cast. Immediate delivery always certain.*

**RAYMOND**
**Lead Roof Flanges**

RAYMOND LEAD WORKS
900 West Eighteenth Street
CHICAGO, ILL.

Do the hinges on the seats you install get rusty and pull away from the wood? If they do, install Built-Well Toilet Seats from now on and stop this trouble.

*You can get them from your jobber.*

**The Built-Well V-Lock Joint**

Sectional view of joint, turned upside down to show how dowels are inserted from bottom. Moisture only makes them tighter.

*Patented*

*Built-Well Mfg. Co.* 300 N. Robey Street Chicago, Ill.

**You don't have to oil a Wade**

Back Water Gate Valve if it is flushed regularly by direct pressure of water. This flushing also prevents clogging. The installation of a Wade Back Water Gate Valve is real insurance against flooded basements.

*Order from your jobber*

**Wade Iron Sanitary Mfg. Co.**
**551 Fulton St., Chicago, Ill.**

### ISSUES STATE ASSOCIATION BULLETIN

In a recent bulletin sent to members, W. E. Coley of Norfolk, president of the Virginia Associated Plumbing and Heating Contractors, emphasized the necessity for a state-wide plumbing code. Mention is also made of the fact that the Charlottesville association elected W. L. Lacy as its new president. New showrooms of which the president has heard are recorded, and personal items are also included.

Mr. Coley calls attention to the platform of the association as follows: A plumbing code and licensing law; trade extension books in every shop; clean, attractive places of business, and a better public understanding of the plumbing and heating contractor.

### WASHINGTON, D. C., ASSOCIATION GAINS IN MEMBERSHIP

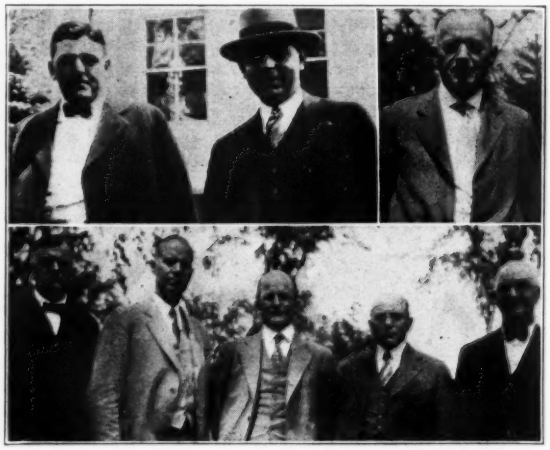
Progress is being made by the Master Plumbers' Association, Inc., of Washington, D. C., a recent bulletin from that body shows. Among other activities of the association during the last month is the securing of 14 new applications for membership, a splendid showing. The membership committee is headed by C. E. Rabbitt and consists of D. H. Alsop, H. C. Eslin and M. A. Welch.

### ORGANIZE NEW ASSOCIATION IN NEW JERSEY

The Associated Master Plumbers of Pennsauken Township (N. J.) and vicinity has been organized with fourteen members. T. McDonald has been elected president of the association, and the rest of the officers are as follows: John J. Donahue, vice president; Paul Diehl, secretary; H. Benecke, treasurer. The association members and their families held a picnic on July 18 at Tumbling Dam Park.

### DIES FROM MONOXIDE FUMES

Elmer C. Benson, engaged in the plumbing and heating business in Alta, Iowa, was killed a few days ago by the Carbon monoxide fumes from the exhaust of his automobile. He was preparing to make a trip in the country and started early in the morning, and then evidently was making a search for some tools under the seat when the fumes from the exhaust, being still in the garage, overcame him.



**Top row: Arthur Moulton of Portland, Fred Hall of Grinnell Co., C. A. Kieser of Newton. Bottom row: J. Preston Perham of Boston, Prof. Richard G. Tyler, Massachusetts Institute of Technology; Dean Paul Cloke, and Prof. Embert H. Sprague, both of University of Maine, Orono; George T. Noyes of Presque Isle. Photos taken at recent short course at the University of Maine**


# 30,000 Pounds of Copper in These 5 Boilers!

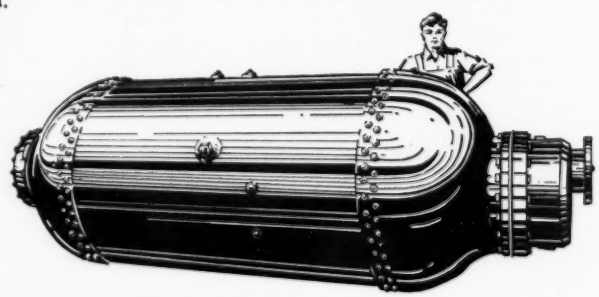
*New York Life Insurance Building, New York City; Cass Gilbert, Architect; Starrett Bros., Inc., Builders; W. G. Cornell Co., Heating & Plumbing Contractors*

For furnishing the new New York Life Insurance Building, New York City, with copper boilers for hot water supply, the Dahlquist Mfg. Company was naturally selected, for this installation was unique in size and in the requirements of design and quality.

Five tremendous boilers containing three tons of copper each and with individual capacities of 1000 gallons were specified and produced for this job. Each boiler was tested under 400 pounds pressure for a guaranteed working pressure of 250 pounds to the square inch.

Only a manufacturer with the most extensive production facilities and with years of practical experience could have been safely entrusted with the New York Life Insurance Building hot water boiler contract, and we naturally take pride in the fact that we were selected for this extremely difficult and important job. Architects and engineers may be assured that their requirements for industrial copper boilers will be faithfully carried out by us regardless of the size or technical difficulties involved.

The Dahlquist Mfg. Company also produces in addition to large industrial equipment a complete line of copper household hot water heating units, all of which may be supplied with the famous Dahlquist Aquatherm, a patented device which greatly increases the efficiency of the range boiler. Its new product, the Super Aquatherm Automatic Storage Heater just introduced is the last word in hot water service for the home.



*Write us now for complete informatian regarding Dahlquist Products*

**Dahlquist Manufacturing Co.** *America's Largest Copper Boiler Makers* A, 2nd and West 3rd Sts. South Boston, Mass.

**IN HONOR OF A. M. IRVING, UNDERTAKER**

This poem was sent in to a Southern newspaper by a colored woman:

*Let me tell you dear friends of mine,*
*Just what I am going to say:*
*We have an undertaker now,*
*And he sure does take the day.*

*And he is the very man we know*
*That is trying to make it good,*
*He once did sell you furniture*
*Made from mahogany wood.*

*But now he has changed his ideas*
*To earn his daily bread;*
*He is giving us a lifting hand*
*In burying of the dead.*

*Now don't you think that nice of him,*
*To have that kind of place;*
*And if you chance to meet him*
*There is a smile upon his face.*

*And it was in his younger days,*
*We cannot understand*
*He would sell you goods or furniture*
*On the installment plan.*

*He has served both white and black*
*In a nice and pleasant way*
*And that is why the Lord*
*Has let him prosper every day.*

*Now let us try to build him up—*
*You know it is our place.*
*Remember, he is a colored man,*
*Of the Ethiopian race.*

---

**"SY" SEZ**

Doctor: "Your husband must have absolute quiet. Here is a sleeping draught."

Wife: "And when do I give it to him?"

Doctor: "You don't give it to him—you take it yourself."

---

Speaking of twentieth-century efficiency, every married man knows that the automobile has made it possible for women to do three times as much shopping as was humanly possible in the old days.

---

A fellow was thrown out of an eastern school recently for conduct unbecoming to a college man. He probably insisted on wearing garters.

---

In golf a good lie will help your score—and your alibi.

"SY" MARTIN, Owensboro, Ky.

---

**A GOOD FELLOW**

"What's the price of this coat?" asked the lady customer of the proprietor of a clothing store.

"That one is fifty dollars," was the reply.

"Too cheap," sighed the lady. "I want a coat of quality."

The clothier shuffled up the coats and produced the same one. He offered it for a hundred dollars this time, and the lady bought it.

After she had gone, a minister who had been standing nearby came over and said, "Can you account for the right of that in the Scriptures?"

"Sure," said the clothier. "She was a stranger and I took her in."

HAYSCO SPIGOT.

---

Now what was that smart last line we were going to use?

L Y T.


**OIL HEAT—AS BENEVOLENT AS SUNSHINE**

# *NOW* is the time!

*THESE are the days when oil heating equipment is being sold!* As summer draws to a close, home-owners plan for next winter's improvements, and heating contracts for fall building are still to be let.

Self-regulated—as *effortless* as an electric clock—oil heat eliminates the drudgery of the coal pile and substitutes a clean basement, with extra space, and greater cleanliness throughout the house.

*They Will Turn To You*

Your customers, in ever-increasing numbers, are thinking and talking this modern form of heating. The only question in their minds is *the kind of oil heating equipment best suited to their needs.*

It is to you, as the heating expert in your community that they will look for the facts. It is for you that profit waits on every old-fashioned furnace where this simple installation can be made.

*Avail Yourself of This Help*

Begin right by getting full information about all reliable types of oil heaters. The Oil Heating Institute can be of immeasurable service in helping you. This organization is the clearing house for information about the oil heating industry. It has for its purpose safeguarding the contractor, his customers and the industry itself.

A series of booklets on oil heat, written by national authorities and containing complete information, together with illustrations, on approved oil heating appliances, are now part of the Oil Heating Institute's service to the public. The coupon will bring the one in which you are most interested.

This is the Emblem of the *Oil Heating Institute*

It is the symbol of satisfactory public service in oil heating.

Only the manufacturers who are members of the Oil Heating Institute are permitted to use it.

These manufacturers have earned their membership through the enthusiasm of thousands of home owners whom they have provided with efficient and dependable oil heat.

This emblem protects you, and it will be protected, on your behalf, by the Oil Heating Institute.

*The Oil Heating Institute is prepared to furnish special information on the heating of churches, theatres, hotels, apartment houses and office buildings, and on the various heat treating processes of industry.*

## OIL HEATING INSTITUTE

420 Madison Avenue New York

*Check the book you want*

MAIL THE COUPON TODAY!

OIL HEATING INSTITUTE D. E.-8
420 Madison Ave., New York City

Please send me, free of charge, the following information on oil heating equipment:

Does it Pay to Install an Oil Heater?.....
Are Oil Heaters Perfected?.....
What About the Supply of Oil Fuel?.....
Making Better Use of the Basement.....

Name .....
Address .....
City ..... State .....

# Leonard Mixing Valve

In all Leonard Water Mixing Valves, you are sure of highest quality and most accurate performance. In the valve shown, the flow is restricted to five gallons per minute and the temperature scale is marked from 80 to 120 degrees.

*From your jobber for all water mixing requirements.*

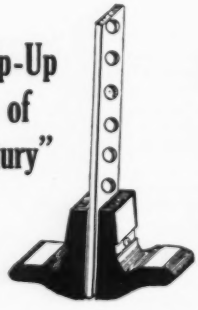
LEONARD-ROOKE COMPANY
Providence Rhode Island

Sterlco
TRADE MARK

# "KWIC-LIFT"

***Most Practical Ceiling Radiator Hanger Made***

"The Up-Up-Up Hanger of the Century"



No Scaffolding

No Jacks

No Broken Backs

**Inserted Between Columns of Radiator**

***Ask your jobber for them***

STERLING ENGINEERING CO.
1630 Holton Street, Milwaukee, Wis.


## SAN FRANCISCO PLUMBERS HEAR ABOUT RUUD HEATERS

Marking the opening of an intensive midsummer sales campaign, the H. R. Basford Co. of San Francisco, distributors of Ruud water heaters, were hosts to the local masters at Master Plumbers' Hall, 120 Page street, recently.

With a brief introductory talk by William J. Monihan, president of the San Francisco association, the meeting was turned over to the Basford organization, George Egleston, general manager, making the initial talk. He said, in part, that his company has always recognized the plumber as a logical outlet for its goods, believing implicitly that by co-operating with him, far more satisfactory results are being obtained. In support of this, Mr. Egleston said that for the first six months of 1928 they have sold to and through plumbers 2,080 water heaters, netting the masters $15,000 in commissions outside of profit.

**Display and decorations at Master Plumbers' Hall on "Ruud Night"**

Albert Rice, sales manager of the Basford Co., spoke on the new idea in salesmanship—"The Joy of Hot Water," as he called it. He stressed the advantage of getting away from trying to sell a water heater as such, playing up, instead, the satisfaction, the convenience to all household members, of having unlimited quantities of hot water always available. "In spite of the popular belief to the contrary," said Mr. Rice, "the good old summer time is the time to sell water heaters. The business is waiting for us; all we need is energy enough to go after it."

The evening's program was interspersed with musical numbers, story-telling and community singing. A delicious buffet lunch was served.

## *Epigrams—For Your Use*

The man who boasts of superior brains is seldom able to furnish the proof.

* * *

Matrimony destroys many delightful engagements.

* * *

A man of the smallest caliber always is the biggest bore.

* * *

Multiplying her words seldom adds to a woman's popularity.

* * *

A man always imagines he wants the earth until he gets sick.

* * *

About the only cheap thing that gives satisfaction is a compliment.

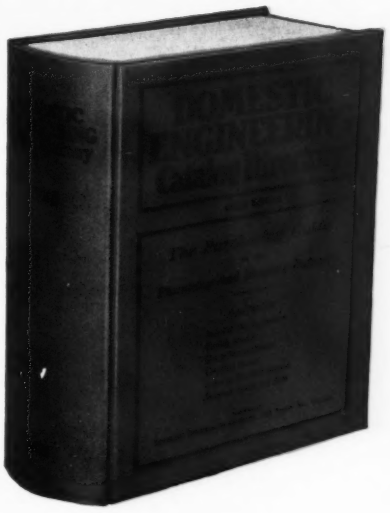
---

Harold G. Wilson, instructor of plumbing, Forbes School, Pittsburgh, Pa., and teacher of evening classes at Carnegie Institute, Pittsburgh, left for England recently and will return to Pittsburgh in September to take up his teaching work.

# Specifications

## and

## Domestic Engineering Catalog Directory



**Standard Catalog Size**
**7¾ by 10⅝ inches**
**2000 pages — 13000 illustrations**
**Price $5.00 prepaid**

When the architect or general contractor hands you the specifications on a job and asks you to put your bid in at once, you have to work fast, but you have to be accurate, too.

No doubt the specifications call for many items that are designated only by trade names. Of course, you can't be expected to carry in your head the names of all the manufacturers and the trade names they use. Neither is it necessary to do so, because **Domestic Engineering Catalog Directory** fulfills these duties most efficiently.

Between the covers of this exceptional book over 2000 items that are used in the plumbing and heating field are listed together with the names of the manufacturers making them and any trade names they use. This feature greatly simplifies the problem of checking up an item, as it only takes a moment to find out just who makes it by referring to **Domestic Engineering Catalog Directory.**

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Thus with the help of **Domestic Engineering Catalog Directory** you are able to make your bid with complete ease of mind, because you are acquainted with all the items that make up the job.

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**Domestic Engineering Co.**

**1900 Prairie Avenue CHICAGO, ILLINOIS**

Please send us a copy of the 1928 edition of **Domestic Engineering Catalog Directory** in accordance with the special approval offer. We will either remit $5.00 or return the book within 30 days.

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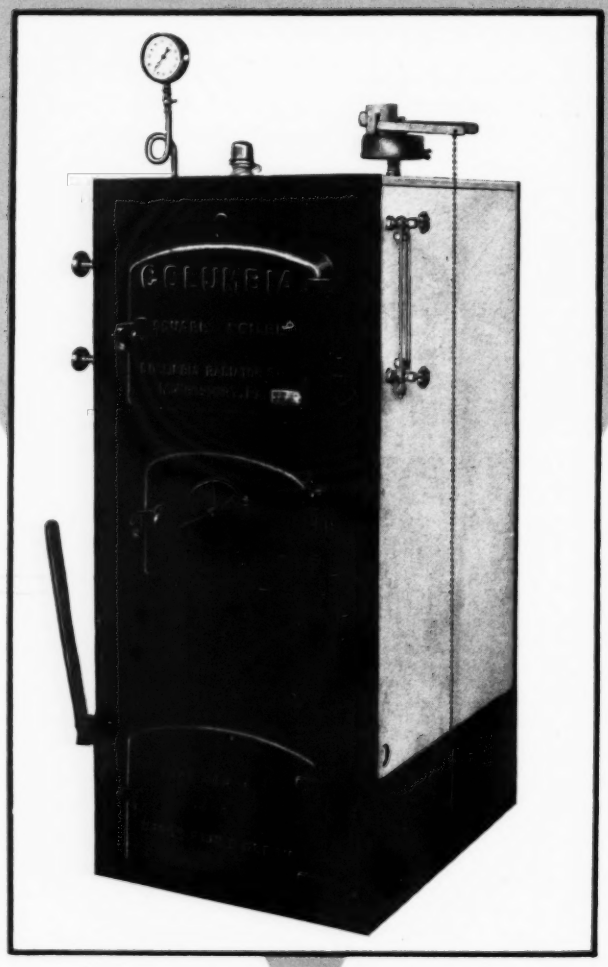
# COLUMBIA

## JACKETED BOILER

*~an ideal boiler for the home*




- Large ample flues
- Long flue travel
- Large heating surface
- Rapid and efficient heating
- Asbestos insulation minimizes heat losses

- All interior parts accessible
- Draft door on side of boiler
- Erection of boiler and jacket very simple
- Black enameled doors
- Black and gray steel jacket

| Boiler No. | Steam Rating | Water Rating | Hard Coal Fuel Capacity Lbs. | Base Dimensions | Grate Area Sq. Ft. | Flow and Return Tappings |
|---|---|---|---|---|---|---|
| 417 | 400 | 675 | 145 | 24½ x 18 | 1.5 | 2—2½ |
| 517 | 575 | 950 | 195 | 24½ x 22 | 2.0 | 2—2½ |
| 617 | 750 | 1250 | 245 | 24½ x 26 | 2.5 | 2—2½ |
| 717 | 925 | 1550 | 295 | 24½ x 31 | 3.0 | 2—2½ |
| 817 | 1100 | 1850 | 350 | 24½ x 35 | 3.5 | *3—2½ |
| 917 | 1275 | 2150 | 395 | 24½ x 40 | 4.0 | *3—2½ |

Tappings provided for indirect water heater and hot water coils.

*8 and 9 section boilers have one additional return tapping on right hand side. Water line 46-inch. Flow tapping 56 inch. Smoke pipe 9 inch.

## COLUMBIA RADIATOR COMPANY

PITTSBURGH
Office and Warehouse
McKeesport, Pa.
Phone, McKeesport 4175

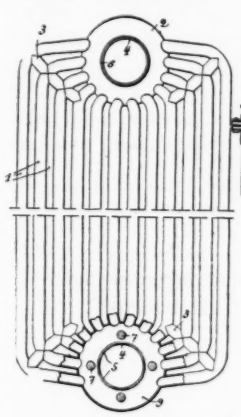
HARRISON, N. J.
Office and Warehouse
119 Bergen St.
Phone, Harrison 2900

NEW YORK OFFICE
Room 705
7 East 42nd St.
Phone, Murray Hill 9847

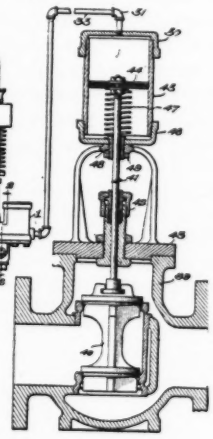
# Plumbing *and* Heating Patents

## *Heating Department*

**1,671,347. Radiator.** Louis Courtot, Paris, France, assignor to American Radiator Company, New York, N. Y., a corporation of New Jersey. A radiator comprising an element consisting of a plurality of tubes of small diameter, and headers formed integrally therewith; said element having relatively thin walls, and providing a homogeneous fluid-tight structure, and the end portions of said tubes, extending angularly inwardly to the peripheries of said headers, and tubular bracing portions formed integrally with said tubes.



1,671,347.

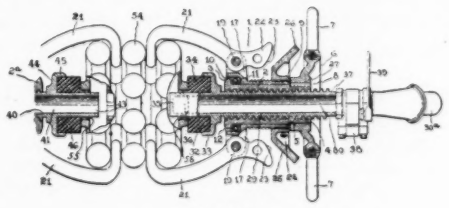


1,671,511.

**1,671,511. Remote-Control Pilot Valve.** William W. Carson, Jr., Knoxville, Tenn., assignor, by mesne assignments, to The Fulton Sylphon Company, Knoxville, Tenn. In a device of the character described, the combination of a chamber, a pressure inlet port and a pressure exhaust port for said chamber, independent valves controlling said ports, a pressure-responsive device subjected to the pressure in said chamber, a movable element subjected to the action of a variant, and a lever having a fulcrum on said pressure-responsive device and a fulcrum on said movable element.

* * *

**1,671,935. Testing Device.** Glen W. Price, Bayonne, N. J., assignor to American Radiator Company, New

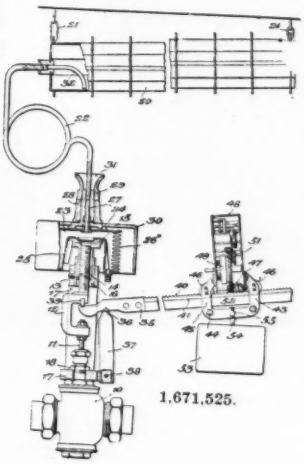


1,671,935.

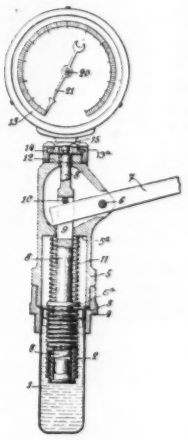
York, N. Y. A testing device comprising a support having a conduit member movable relative thereto, pivot means rotatable on said support, fastening means fulcrumed on said pivot means, and means for causing relative movement of said conduit member and said support.

* * *

**1,671,525. Automatic Temperature Regulator.** Jean V. Giesler, Knoxville, Tenn., assignor, by mesne assignments, to The Fulton Sylphon Company, Knoxville, Tenn. In a temperature regulating apparatus, in combination with means for regulating the supply of heat, a thermostat for operating said means over a wide range of temperatures, a lever provided with an adjustable weight for predetermining the temperatures at which said thermostat may operate said means, and motive means for moving said weight along said lever to progressively vary the temperature at which said thermostat may operate said means.



1,671,525.

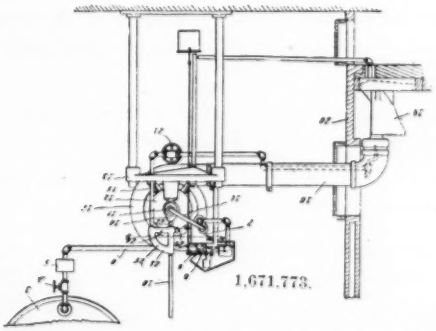


1,671,934.

**1,671,934. Combined Regulator and Temperature Indicator.** Henri Praud, Paris, France, assignor to American Radiator Company, New York, N. Y. In a combined regulator and temperature indicating device for boiler use, the combination of a supporting element, a lever fulcrumed on said element and adapted to control the draft register of a boiler, a thermostat supported by said element, an element operatively connecting said thermostat and said lever, a temperature indicator of the dial and pointer type mounted rotatably on said supporting element, means for connecting said connecting element and pointer to actuate the latter and permitting rotation of the indicator relative to said supporting element without changing the operative connection between said connecting element and the indicator pointer, and means for securing indicator to supporting element.

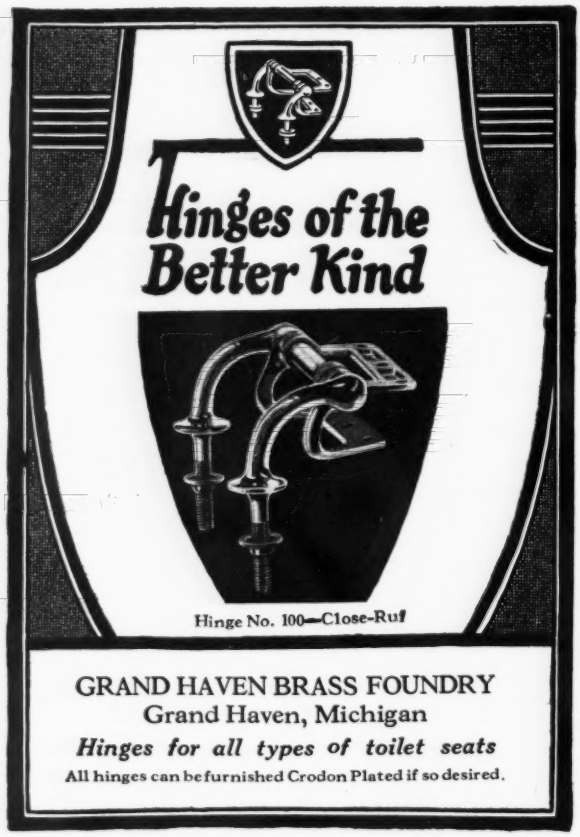
* * *

**1,671,773. Liquid-Fuel-Burning Apparatus.** John H. McIlvaine, Lake Forest, Ill. In a liquid fuel burning ap-



1,671,773.

paratus a pump, a fuel reservoir at a certain elevation with respect thereto for delivering fuel to said pump by gravity, a fuel delivery line to be supplied with fuel from




GRAND HAVEN BRASS FOUNDRY
Grand Haven, Michigan
*Hinges for all types of toilet seats*
All hinges can be furnished Crodon Plated if so desired.

## Sarco Replaces Other Traps Here

When remodeling the heating system of this bank building, 1500 Sarco Radiator Traps were installed to replace the traps previously used. That speaks volumes for the Sarco.

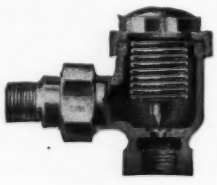
# SARCO
## Radiator Traps

The helical bellows of Sarco Radiator Traps is of large diameter with a heavy wall, insuring even distribution of movement, preventing crystallization of metal and adding years to the life.

A full ¼-inch movement from open to closed position gives rapid circulation and extra large capacity.

Sarco Traps are noiseless in operation, won't freeze, air bind or cause water hammer.

*Other advantages explained in booklet M-136. Send for a copy.*

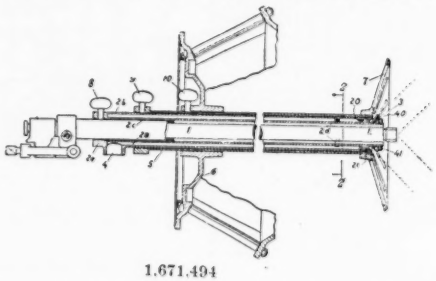


**SARCO CO., Inc.**
183 Madison Ave., New York
*Branches in principal cities*


said pump normally under a certain pressure and extending to a furnace to be supplied with fuel, a stand pipe communicating with the outlet side of said pump and arranged to have a certain level of fuel maintained therein in the normal operation of said pump, and a two-way connection between the outlet side of said pump and said fuel delivery line and stand pipe, the one way in said connection serving as a main fuel supply duct and establishing communication between the outlet side of said pump and said fuel delivery line at a point above the level of the fuel in said fuel reservoir, and the other way in said connection serving as a by-pass establishing communication between the outlet side of said pump and the fuel delivery line below the level of fuel in said fuel reservoir whereby to be fed with fuel by gravity therefrom, but being restricted so that the rate of flow of fuel therethrough is slower than is otherwise the case through the other connection.

* * *

1,671,494. Fuel Burner. Clarence Russell Stewart, Monterey Park, Calif., assignor to Peabody Engineering Corporation, New York, N. Y. A burner comprising a frame, a tubular sleeve slidable in said frame and carry-

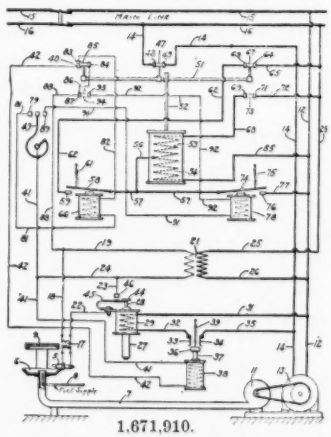


1.671.494

ing at one end a flame plate, a tubular gas supply pipe slidable in said sleeve and having an annular discharge orifice, and an oil burner pipe slidable in said gas supply pipe and having its discharge orifice adjacent the annular discharge orifice when in operative position.

* * *

1,671,910. Heat-Regulating System. Harold W. Sweatt and Frederick S. Denison, Minneapolis, Minn., assignors, by mesne assignments, to Minneapolis-Honeywell Regulator Company, Minneapolis, Minn. In an apparatus for burning fluid-fuel; a motor included in an electric



1.671,910.

circuit, an ignition circuit including a fuel ignition device, two solenoid switches, one in the ignition circuit, and the other in a shunt circuit of the motor circuit, the solenoid of the ignition circuit being energizable by current delivered through the shunt circuit of the motor

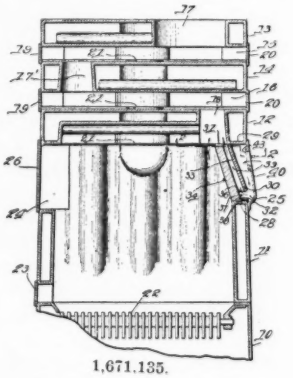
circuit to move the switch of the ignition circuit to circuit closing position, the solenoid of the shunt circuit under energization operating its switch to open the circuit for deenergizing the solenoid of the ignition circuit, means in the ignition circuit for effecting a predetermined time-period movement of the ignition circuit switch for opening said circuit, and means for restoring the switch of the shunt circuit to normal closing position upon deenergizing the solenoid of the shunt circuit switch from a break in the motor circuit, for supply of current through the shunt circuit to the solenoid of the ignition switch upon restoration of the current.

* * *

1,671,417. Welding Rod. Russell Franks, Elmhurst, N. Y., assignor to Oxweld Acetylene Company. A welding rod composed of alloy containing tungsten 1 per cent to 12 per cent, chromium 25 per cent to 35 per cent, boron 0.10 per cent to 1.0 per cent, carbon 1.0 per cent to 3.5 per cent, silicon at least 0.50 per cent and not over 3.0 per cent, and manganese in sufficient quantity to deoxidize the alloy, the ratio of silicon to manganese being at least 0.9.

* * *

1,671,135. Boiler Construction. William R. Stockwell, Michigan City, Ind. In a boiler, the combination with a fire pot having an opening through which the fuel may be fed into the interior of the pot; of a water jacketed crown sheet above said fire pot, said crown sheet having an opening there-through adjacent the wall



1,671,135.

of the boiler for establishing communication between the interior of the fire pot and a flue located above the crown sheet; and flue means at the back of the boiler, said flue means being entirely exterior to the crown sheet and having an inlet communicating directly with the atmosphere and an outlet communicating directly with said opening in the crown sheet at the entrance thereof to supply air directly from the atmosphere.

* * *

1,671,892. Damper Regulator. Charles H. Dutcher, Jersey City, N. J., assignor to Kieley & Mueller, Inc., New York, N. Y. An automatic draft regulator for steam boilers, including a weighted beam arm, a diaphragm operable by the steam pressure in the boiler for moving the beam arm, a piston cylinder, a piston mounted in the cylinder having operative connection with the damper of the boiler flue, a hydraulic pressure valve connected with the cylinder, said valve having a hydraulic pressure intake and exhaust and a shiftable valve plunger in said intake movable to position for respectively admitting hydraulic pressure to and exhausting said pressure from the cylinder at one side of the piston and for closing both the intake and exhaust to render the valve inactive, an actuating lever connected with the valve

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**BEYOND THE SEWER MAINS**

People bathe beyond the city limits. They want a nice white tub, lavatory, toilet, sink, and laundry trays, and a septic tank that is correctly designed, that will not chip, peel, or crack, at a price that is not too high. They're first class prospects for Celina Septic tanks. Go and sell 'em and profit.

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SEPTIC CELINA TANKS *Insist on a Celina Tank. If your jobber cannot supply you write us.* SEPTIC CELINA TANKS

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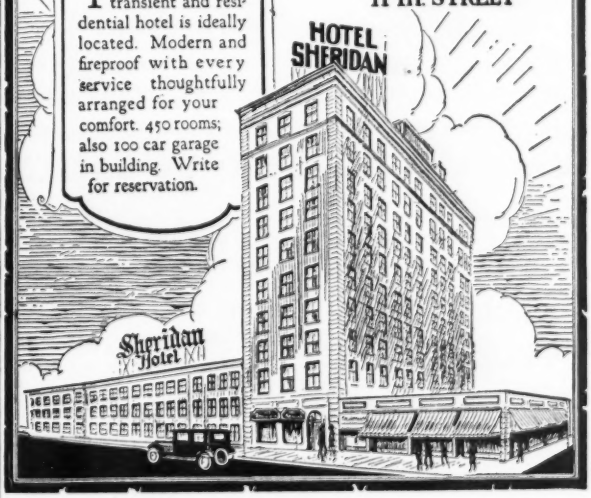
THIS beautiful new transient and residential hotel is ideally located. Modern and fireproof with every service thoughtfully arranged for your comfort. 450 rooms; also 100 car garage in building. Write for reservation.



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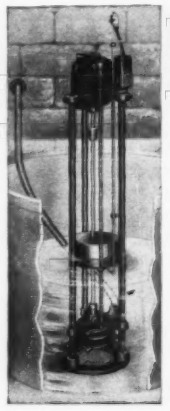
**Ask your jobber to show you a Bullard Roof Flashing. Look it over carefully, get the "feel" of it. Even from such a superficial examination, you'll know that Bullards are really *built* . . . and when you put one to work, you'll have its superiority proven to you.**

**THE BULLARD SPECIALTY CO., *Tiffin, Ohio***



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**AUTOMATIC PIT & CELLAR DRAINAGE PUMP**

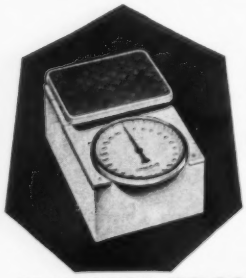
**Most dependable unit to be had**

Non-rusting shaft, non-rusting bearing, non-rusting pump proper. Delivers the maximum amount of water a ¼ H. P. motor can pull without overload.

**AURORA PUMP COMPANY**
AURORA, ILLINOIS
*Manufacturers Deep Well Turbines, Centrifugal Pumps, Trench Pumps*

## In colors to harmonize

*with modern bath rooms*



**HANSON**
**WEIGH MASTER**
**BATH ROOM SCALES**

You always make more money on Hanson Scales. Send for literature.

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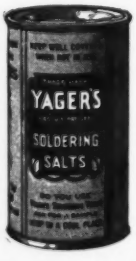
## YAGER'S SOLDERING SALTS

For All Lead Work



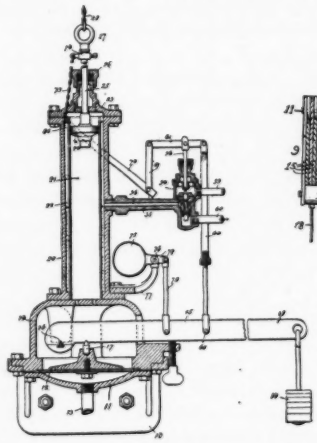

Just the thing for tinning irons, soldering or wiping joints.

You should have it in the shop at all times.

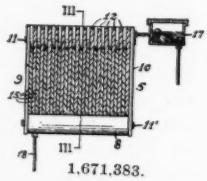
*Write "Dept. D." for sample.*

**ALEX R. BENSON CO., Inc., Hudson, New York**
For list of distributors see 1928 McRae Blue Book.
*Sales Agency for Canada: Canadian General Electric Co., Ltd., Toronto and Montreal*


plunger for shifting the same, a connection between one end of the actuating lever and the beam arm for shifting the valve to admit hydraulic pressure to and exhaust said pressure from the cylinder, and a connection between the opposite end of said lever and the piston for rendering the valve inactive, the said hydraulic pressure valve having a lower portion of reduced diameter provided with an internal thread, a valve plunger bushing having a complementary external thread to facilitate the removal and renewal of the same when worn.



1,671,892

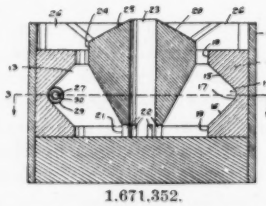


1,671,383.

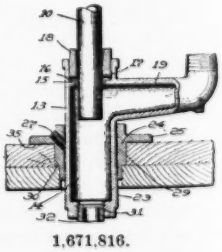
1,671,383. Air Filter. William Edward Snaman, Pittsburgh, Pa. On an air filtering apparatus, a moisture supply reservoir, a drip pan positioned below the latter, a plurality of vertically disposed fibrous moisture conductors arranged to provide a series of opposed, spaced rows of filtering elements, the upper ends of said conductors being secured in said reservoir and the lower ends extending into said drip pan, the conductors of one row being disposed in staggering relation with respect to the conductors of an adjacent row, means for supplying water to said reservoir, means for draining said drip pan and means carried by each of said conductors and coaching with the drip pan for tensioning the conductors.

* * *

1,671,352. Oil-Burning Device. Joseph Alexis Philippe De Guise, Sorel, Quebèc, Canada. In an oil burning mechanism, a casing, a center piece of refractory material braced from the casing and tapering to outlet openings leading to a central vertical discharge passage forming a heat director, a base of refractory material for said center piece and an encircling wall spaced from said center piece and forming therewith an annular combustion chamber having upper air openings thereinto and feed passages constituting primary mixing chambers.



1.671,352.



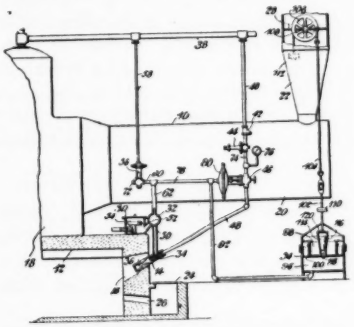
1,671,816.

1,671,816. Pipe Fitting. Walter G. Dows, Dorchester, Mass. A pipe fitting for connecting a radiator to a riser, comprising in combination, a hollow fluid-tight casing adapted to form a connection between two aligned pipes

of a riser, a neck extending laterally from the casing and having an upwardly extending end for connection to a radiator, means forming a sliding connection between the casing and one of said pipes to permit the casing to be adjusted vertically relatively to the last mentioned pipe while rigidly secured to the other pipe, and a supporting sleeve threaded upon the casing for adjustment lengthwise of the casing and provided with a laterally extending flange adapted to rest upon the floor of a building to support the casing.

* * *

1,671,822. Oil-Burning System. Benjamin Greenfield, Bartlesville, Okla., assignor to Doherty Research Company, New York, N. Y. In an oil burning system, means

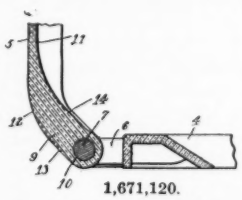


1 671.822

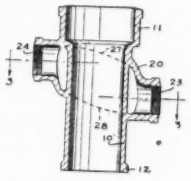
for feeding oil to a burner by steam injector action in proportion to the steam demand, and means for transmitting the vacuum produced by the said steam injector action to a regulating means to control the steam passing to the said burner and to control the air supply.

## *Plumbing Department*

1,671,120. Toilet-Seat Cover. Emil J. Nielsen, Rockford, Ill., assignor to Phenolic Products Corporation, Rock-



1,671,120.



1,671,278.

ford, Ill. The combination with a toilet seat for a water closet, having a hinge pintle for swingably mounting the same, of a cover arranged to lie in a substantially horizon-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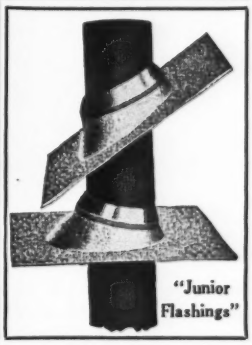
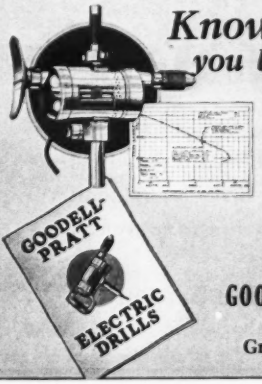


"Junior Flashings"

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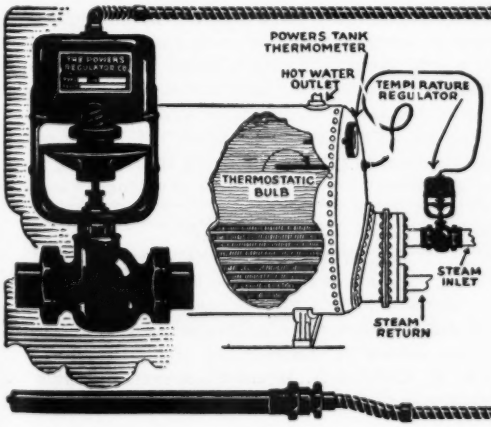


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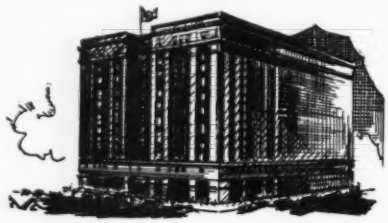

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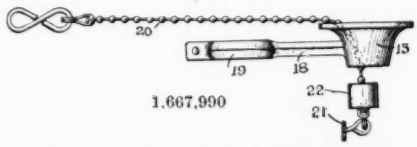
tal position to cover the seat or to be raised off the seat to a substantially vertical position, said cover having a heel portion integral therewith extending inwardly behind the seat to receive the pintle in an opening therein, and said heel portion extending at an angle of about 45 degrees to the plane of the cover whereby the outside face of the heel portion lies at about 45 degrees to the horizontal when the cover is lowered and the inside face lies at about the same angle to the horizontal when the cover is raised so that no pocket is left in either position of the cover and any moisture getting onto the cover will drain off and leave the cover dry.

* * *

1,671,278. Combination Vent and Soil Pipe Fitting. Bernard Drawe, Cleveland, Ohio. A combination soil and vent pipe fitting comprising a main pipe section having a socket at its upper end and a transverse pipe embracing the exterior of the main pipe leading from one side of it to the other side beneath said socket, the distance across the transverse pipe and the main pipe section from front to back being no greater than the external diameter of the socket.

* * *

1,667,990. Valve-Operating Device. Robert Rogers, Dallas, Tex. A valve operating device of the character described including a flexible strand adapted to be connected at one end to a valve adapted to be lifted from its seat, a

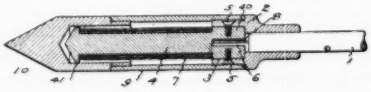


1.667.990

guide adapted to be fixed above the valve, said flexible strand being adapted to pass upwardly from the valve through the guide and then laterally from the guide for being pulled at its other end, said guide embodying a frusto-conical tubular member tapered larger, in an upward direction, and having a metallic sound-deadening lining, said flexible strand embodying a metallic beaded chain.

* * *

1,671,344. Soldering Implement. Clarence M. Chapman, Terryville, Conn. The combination in an electrical soldering implement having a tubular shank with a socketed head, a sleeve attached to the head and a point at-


1.671.344.

tached to the sleeve, of a solid metallic heating element core having an integral flange at each end with a resistance wire wound about said core between the flanges, one of said flanges being entered into the socket of and attached to said head, and the other of said flanges extending into contact with but free to move within the point for supporting that end of the core and transmitting heat to the point without interfering with the lengthwise expansion or contraction of the core.

### RICHMOND SOCIETY ELECTS NEW OFFICERS

At a recent meeting of the Richmond (Ind.) Society of Sanitary Engineers, John H. Niewohner was elected president. He will be assisted in his work by the following other officers elected at the meeting: John F. Thorman, vice president; William H. Meerhoff, secretary; Louis E. Stanley, treasurer.

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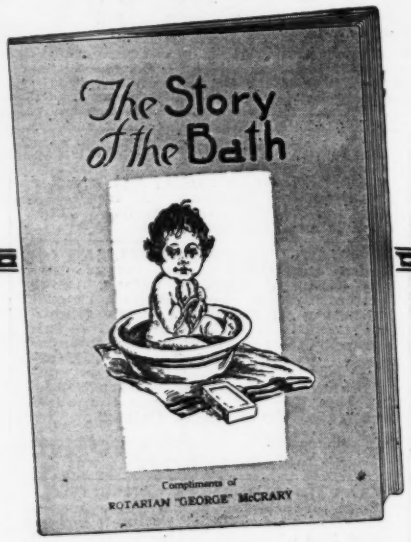


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